

New York  
State College of Agriculture  
At Cornell University  
Ithaca, N. Y.

---

Library



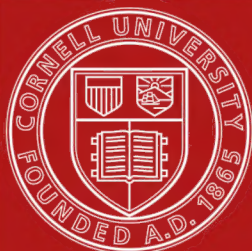
Cornell University Library  
LA 339.N5A3  
v.1

Report.



3 1924 013 063 882

mann



## Cornell University Library

The original of this book is in  
the Cornell University Library.

There are no known copyright restrictions in  
the United States on the use of the text.



REPORT OF

COMMITTEE ON SCHOOL INQUIRY  
BOARD OF ESTIMATE AND  
APPORTIONMENT

CITY OF NEW YORK

*Committee on School Inquiry*

JOHN PURROY MITCHEL

*President of the Board of Aldermen*

WILLIAM A. PRENDERGAST

*Comptroller*

CYRUS C. MILLER

*President of the Borough of the Bronx*

VOLUME ONE

CITY OF NEW YORK

1911-1913

@  
LA339  
N5A3  
V.1



# TABLE OF CONTENTS.

## VOLUME I

	PAGE
Final Report of Committee on School Inquiry of the Board of Estimate and Apportionment.....	13
Improvements in the Public Schools of the City of New York, 1898 to 1911.....	69
Report on the Educational Aspects of the Public School System of the City of New York, by Prof. Paul H. Hanus.....	101
Correspondence between the Chairman of the Committee on School Inquiry, Prof. Hanus, and Dr. Frank M. McMurry, relating to Report of Dr. McMurry.....	199
Report upon (a) the Quality of Classroom Instruction, (b) the Course of Study, and (c) the Supervision by Principals, by Dr. Frank M. McMurry.....	207
Table of Contents for Section of McMurry Report upon the Quality of Classroom Instruction.....	209
Table of Contents for Section of McMurry Report upon the Course of Study.....	263
Table of Contents for Section of McMurry Report upon the Supervision by the Principals.....	331
Report upon "Ungraded Classes" by Dr. H. H. Goddard.....	361
Correspondence between the Chairman of the Committee on School Inquiry, Prof. Hanus, and Mr. Stuart A. Courtis, relating to the Report of Mr. Courtis.....	385
Report on the Courtis Tests in Arithmetic by Mr. Stuart A. Courtis....	389
Table of Contents for Report on the Courtis Tests in Arithmetic.....	393
Report upon Promotion, Non-Promotion and Part-Time by Dr. Frank P. Bachman.....	547

	PAGE
Table of Contents for Report upon Promotion, Non-Promotion and Part-Time.....	551
Report upon the Compulsory Attendance Service by Dr. Jesse D. Burks..	663
Table of Contents for Report upon the Compulsory Attendance Service..	667
Correspondence between the Chairman of the Committee on School Inquiry, Prof. Hanus, and Dr. Herman Schneider, relating to Report of Dr. Schneider.....	743
Report upon "Vocational (Industrial) Schools", by Dr. Herman Schneider	741
Table of Contents for Report upon "Vocational (Industrial) Schools"...	763



## **FINAL REPORT**





FINAL REPORT

COMMITTEE ON SCHOOL INQUIRY  
BOARD OF ESTIMATE AND  
APPORTIONMENT

PRESENTING SUMMARY OF CONCLUSIONS  
OF THE INQUIRY CONDUCTED  
BY THE COMMITTEE

CITY OF NEW YORK  
1911-1913



## TABLE OF CONTENTS.

<b>Introductory Statement.....</b>	<b>PAGE 13</b>
------------------------------------	--------------------

### I. THE RESULTS OF THE INQUIRY.

1. Co-operation Between the Board of Estimate and the Board of Education Established.....	13
2. Economies Effected or Indicated as a Result of the Inquiry.....	15
3. The Achievements of the Local Schools Indicate the Intrinsic Bases for Future Progress.....	16
4. The School is the Intermediary Between the Individual and Society..	17

### II. THE GENERAL CONCLUSIONS OF THE INQUIRY.

ONE: The course of study in all schools should be organized around human problems and made simple and elastic enough to permit of differentiation to meet the needs of different nationalities and groups.....	18
TWO: The content of the course of study should be made as practical as possible and special attention should be given to the development of commercial, industrial and vocational subjects emphasizing the larger and more important aspects of industrial and commercial activities.....	21
THREE: The Board of Education should take necessary steps to effect the gradual elimination of teachers of special branches..	24
FOUR: Each school as a neighborhood center should ally itself with neighborhood interests and take cognizance of local needs.	26
FIVE: The Board of Education should make a careful investigation to ascertain whether cosmopolitan or composite high schools offering several different courses of study or small high schools with differentiated curricula should be developed.....	28
SIX: The Board of Education through the proposed Bureau of Investigation and Appraisal or other bureau, should establish a fact basis for its educational, administrative and financial work.....	29

	PAGE
SEVEN: The Board of Education's attendance department should adjust its work so as to maintain discipline and control school attendance without resorting to police methods in checking truancy.....	32
EIGHT: The educational administrative work of the Department of Education should be reorganized.....	36
NINE: The Board of Education should carefully supervise the operation of heating and ventilating systems installed in the different public school buildings.....	40
TEN: A comprehensive plan should be worked out for the wider use of school buildings for purposes of recreation, for public assemblage and for civic and social gatherings.....	41
ELEVEN: The different administrative departments and bureaus of the Department of Education should be reorganized..	43
TWELVE: The accounting system of the Board of Education should be so adjusted as to make possible the fullest segregation of disbursement accounts along functional lines properly correlated with allied statistics, and their publication at least quarterly.....	47
THIRTEEN: The Board of Education should provide for the collection and tabulation of all current data needed in order to enable it to know in advance what additional seating capacity is actually required throughout the city.....	51
FOURTEEN: The Permanent Census Board should be utilized by the Board of Education and should eventually be transferred to the Board of Education.....	52
FIFTEEN: The Board of Education should be reorganized and its membership reduced from forty-six to eight with sixteen votes as now distributed in the Board of Estimate and Apportionment.....	52
The Import of the Inquiry.....	56
The Place of Education in Modern Life.....	56
The Working Aims of the School:	
1. The school should inculcate knowledge.....	57
2. The school should give to its pupils a mastery of method.....	57
3. The school should do its part to induct the child into life.....	57
4. The school should induct the child into industrial and economic life.....	57
5. The school should give attention to physical education and correction of physical defects.....	57
6. The school should educate for leisure.....	58
Tests of Public School Work.....	58

## III. THE HISTORY OF THE INQUIRY.

	PAGE
1. The Origin of the School Inquiry.....	58
2. The Resolution Ordering the Inquiry.....	60
3. The Plan of the Inquiry.....	61
4. The Cost of the Inquiry.....	63
5. Difficulties Encountered.....	64
6. Aid Furnished by Organizations of Citizens.....	65
7. National Significance of the Inquiry.....	65
8. Concluding Statement.....	65





May 29, 1913.

*To the Honorable,  
The Board of Estimate and Apportionment.*

GENTLEMEN:—The Committee on School Inquiry, of the Board of Estimate and Apportionment, appointed pursuant to a resolution adopted by this Board on October 26, 1910, herewith presents its final report. The report comprises three volumes, and consists of the report of the Committee and the reports of the various specialists employed by it.

It was originally the intention of the Committee to take up in conference with the members of the Board of Education the reports of the various specialists before the submission to the Board of Estimate of the Committee's final report, in order that its report might be based upon the consensus of opinion of the members of the Board of Education, as well as the members of the Committee. The work of the inquiry, however, has consumed so much more time than was originally expected, and other matters of great importance have demanded so much of the time of the members of the Committee, that it has been impossible to conduct the proposed conferences. The Committee feels that more will be gained by submitting the entire results of the inquiry at the present time, while there still remains an opportunity to secure constructive results during the life of the present administration, than would be gained by undertaking a conference at this late date.

## **I. THE RESULTS OF THE INQUIRY.**

Your Committee submits herewith a brief outline of the results and general conclusions of the school inquiry for the consideration of the Board of Education, and indicates the salient facts relating to its origin, plan and significance.

### **(1) Co-operation Between the Board of Estimate and the Board of Education Established.**

Your Committee is able to report that there is now nothing to prevent the fullest coöperation between the City Government and the Board of Education in the development of the public schools. In a statement transmitted by Superintendent William H. Maxwell to the Comptroller, outlining his plans for the use of the proposed allowance of \$9,250 for one statistician experienced in school matters, three clerks and one stenographer and typewriter, he has listed what he will be able to undertake, with the aid of the proposed force, as follows:

1. "The design is to relieve as far as possible the principals and teachers of schools from making the very heavy and cumbersome annual report from which statistics for many important purposes are derived, and instead thereof to keep in this office, derived from the monthly reports of principals, a statement drawn up in proper statistical form of any essential facts from month to month, which will be practically com-

pleted when the month of June arrives, and from which the necessary reports may be made to those requiring them at any time.

2. "To relate the registration and attendance of the public schools to population more closely than is done at present.

3. "To collect and study all statistics bearing upon the matter of the selection of sites for new school buildings and to enable the City Superintendent to advise the Board of Education regarding the proper order for the erection of buildings and the purchase of sites.

4. "To make careful study of the problems of promotion and non-promotion, rapid advancement and retardation, not only for the benefit of the children concerned, but for a more economical administration of the schools.

5. "To collect statistics bearing upon the proper distribution of the pupils in the schools throughout various school buildings, by districts, as far as this subject may be within the direction and control of the Board of Education.

6. "To collect and tabulate statistics acceptable to the Budget Committee of the Board of Estimate as to the need for new teachers in day elementary, high, training and evening schools, etc.

7. "To prepare the necessary annual reports for transmission to the State Department and the United States Department of Education.

8. "To make careful study of all these statistics and any similar statistics with a view to a more efficient and more economical administration."

It is now apparent that the Board of Education has indicated its intention to adopt a definite program for the development of the schools and to conduct its work upon the basis of fact, rather than upon the basis of educational opinion.<sup>1</sup> If the fact basis is accepted, and adhered to by the Board of Education, the chief source of discord will have been eliminated, for the only possibilities for future differences of opinion will lie in the interpretation of facts and in the translation of knowledge into action. The situation calls for the hearty coöperation of the Board of Estimate and Apportionment with the Board of Education, for enlightened public opinion may be safely depended upon in the future to throw the weight of its influence in the right direction. Your Committee believes that the establishment of intelligent coöperation in the place of misleading irresponsible conflict is well worth all that this inquiry has cost even if no other constructive suggestions had resulted therefrom.

As further evidences of the willingness of the Board of Education to coöperate with the city government for the good of the schools, attention is called to the special investigations of (1) ventilation, (2) truancy, (3) reports and the reporting system, (4) methods of estimating the number of teachers required in the conduct of the schools,

<sup>1</sup> The semi-annual report of Hon. Thomas W. Churchill, President of the Board of Education, which was presented to that body on July 9, 1913, contains the following reference to the present relation of the Board of Education to the Board of Estimate and Apportionment:

"The year has shown what in previous years many had surmised to be true, that quarrels with the Board of Estimate are unnecessary and wasteful. The Board of Education, by delegating so many of its duties to subordinates, had lost touch with the real needs of the schools and had found itself unable to understand or to demonstrate to the Board of Estimate the needs of the schools. Subordinates will confer freely with the Board of Education and substantiate, by a less reluctant exhibition of records, statistics and facts, their propositions. As a result you will gain, in the opinion of the Board of Estimate, your rightful standing as a body conversant with the needs of the schools, a body economical in requisition for those needs, and a body determined in accordance with the laws to be the factor to decide as to how the Department shall be conducted."

(5) the retirement fund, (6) superior merit and the work of the Board of Examiners, (7) the training schools for teachers, and (8) the course of study, all of which have been carried on by the Board of Education during a period covered by this inquiry. Within the past six months the Board of Education has acceded to the request of this Board, and has made provision for the more definite calculation of salary accruals. On May 14 the Board of Education adopted a resolution calling for a trial of the method proposed by Dr. Frank P. Bachman, one of the specialists engaged by this Committee, for the collection of information upon which to base its estimates for additional elementary and high school teachers. Principals' and teachers' associations have been studying the various interim reports submitted by this Committee, and have made very helpful reports as a result of their deliberations and study. The special committee of the Board of Education which has been studying the Bachman report on "Intermediate Schools" has reported in favor of their extension as far as possible.

## **(2) Economies Effected or Indicated as a Result of the Inquiry.**

There is no way to measure in terms of money the economies effected as a result of this investigation and through the work of this board. An indication is afforded by the annual budget estimates of the Board of Education. Before this board began to ask questions the Board of Education yearly estimated that the annual increase of school population was twice what it actually had been.

For example, when the elementary school principals were requested through the City Superintendent to estimate the increase in register in their respective schools on December 31, 1912, over the register in December, 1911, the estimates, when added together, indicated an increase of 35,377 pupils, whereas the employees of this Committee showed that the actual average annual increase for four years previous was only 19,108, or 16,269 less than the principals' estimate for the year 1912 over 1911.<sup>1</sup>

The effect of this analysis upon the Board of Education's own estimate is shown by the following, taken from its estimate for 1913: Estimated increase in register for December 31, 1912, 18,607; average annual increase for five years, 16,885. This shows a difference between the estimated increase and the average annual increase of only 1,722. In 1912 the Board of Education asked for a total of 1,260 additional teachers, to cost \$648,056. Whereas, for 1913, it asked for only 986 additional teachers, to cost \$523,016. Despite the fact that the equal

<sup>1</sup>In this connection Dr. Frank P. Bachman makes the following statement in his report on Estimating for Budget Purposes the Number of Teachers Needed in the Elementary Schools:

"These exaggerated estimated increases in the register when the individual school was the unit of the forecast and principals were relatively free to make their estimates in their own way illustrate how inexact such estimates are and how more exact estimates could easily have been made on the basis of the increase year over year for a series of years in the register of the system as a whole."

pay law, which increased the average salary of most teachers, went into effect in 1912, the Board of Education reduced the estimate of the amount of money required for additional teachers by 19.29 per cent., and its estimate of the number of additional teachers required by 21.70 per cent. During the year 1912 over 219 additional teachers were employed for whom no funds were allowed in the budget.<sup>1</sup>

Considerable economies have been effected by the repair shops installed by the Brooklyn Bureau of Buildings following this Board's refusal to vote funds for new desks when remodelled old desks could be used. Further economies in supplies have been effected through a more careful analysis and inspection of goods delivered.

The estimated possible economies set out in the two Armstrong reports alone are as follows:

Report on the Condition and Efficiency of Public School Buildings (annually) .....	\$650,000
Report upon New York Public Schools; Delays in Location, Construction and Design (annually) .....	1,200,000
Total .....	<u>\$1,850,000</u>

The adoption of the coöperative plan of vocational and continuation school work will make unnecessary the construction of at least two vocational schools annually for the next few years, which would have to be provided if the school system were to introduce that training along the lines heretofore recommended by the Board of Education. The coöperative plan of work will, upon that basis, save at least \$1,000,000 annually for the next several years, and will produce much more practical results, if the experience of Cincinnati, Ohio, and Fitchburg, Mass., is to be trusted.

### (3) The Achievements of the Local Schools Indicate the Intrinsic Bases for Future Progress.

As was to be expected the inquiry has demonstrated that the local school system has already conducted experiments and has produced

<sup>1</sup> BUDGETARY REQUESTS OF DEPARTMENT OF EDUCATION TO PROVIDE TEACHERS (1) FOR INCREASE IN REGISTER AND FOR THE REDUCTION OF OVER-SIZE CLASSES ONLY

Budget Estimate of	(1) To be Appointed in Fall Term Preceding Given Budget Year		(2) To be Appointed During Budget Year		(3) Total Amounts Requested
	Teachers Requested	Amount Requested	Teachers (3) Requested	Amount Requested	
1912.....	438	\$307,300.00	914	\$272,874.16	\$579,440.83
1913.....	384	295,480.00	535	(2) 172,208.34	467,688.34
1914.....	324	270,640.00	382	133,666.65	404,306.65

(1) Does not include principals, assistants to principals and additional teachers.

(2) New salary schedules went into effect, increasing initial salary from \$640 to \$720.

(3) Requested for five months only.

tested results which should be utilized for further experimentation and for the eradication of the patent weaknesses in the present system. Your Committee has found much to commend, as well as much to criticise. It believes that it has successfully demonstrated the possibility of offering serious constructive criticism, while at the same time giving due credit for the great achievements of those who have given their best efforts and the better part of their lives to the development of our system of public education. The Committee cordially approves of the praise given to Dr. William H. Maxwell, City Superintendent of Schools,<sup>1</sup> and to the heads of the system by the various reports of the specialists employed by it. It wishes also to express its approval of the work of those in the ranks whose achievements are considerable, of the veritable army of teachers and directors who, unknown and unheralded, perform each task and render each service without fear and for the good of the community.

#### (4) The School is the Intermediary Between the Individual and Society.

This inquiry has re-emphasized that the public school is a great engine of democracy, and, as such, should not be dominated by any class. It can render its greatest service to society when all members of society are giving their best service to it. The American people have a right to expect that their best political scientists, political economists, statisticians, religious teachers, labor leaders and students of public affairs, as well as their best educators, shall coöperate and shall strive to promote the proper development of the public school, for it is only when all of these authorities join with the educator and exert their united efforts that society is truly represented, and that the layman may feel assured that the public school may be made to render service commensurate with its cost and worthy of the fondest hope of democracy.<sup>2</sup>

<sup>1</sup> See Elliott report, p. 261, and letter of Supt. Maxwell setting forth the achievements of the system since 1899, pp. 69-97.

<sup>2</sup> In the publications of the American Sociological Society, Vol. VII, pp. 645-65, Prof. Paul Monroe, of Teachers College, Columbia University, says:

"If I may speak for the largest group of professional men and women in our society, I would formulate this argument in terms of a plea for public education: a plea to the scientist, that he be interested not only in the new interpretation of phenomena, and in the new control of natural forces; but also in the dissemination of scientific knowledge and scientific methods of thought and procedure among the masses, and thus assist in the control of the greatest of all forces, public opinion and social will; to the economist, that he be interested not only in the investigation and interpretation of the economic phenomena of society, but also in that institution which touches more lives and those lives more powerfully than any other save possibly the state itself, that it be not one of the most wasteful of institutions in the expenditure of human energy, and relatively one of the most inefficient in the expenditure of social wealth; to the historian, that he realize that the vital connection in the continuity of history is to be made in the transmission of the achievements and standards of the past to the coming generation; that the really vital thing in history is the *teaching of history* to the end that historic forces and institutions be generally understood and conserved; to the sociologist that he also give attention to the problems of public education, a

The wide discussion of the reports in the daily press and monthly periodicals and the public conferences and discussions thereof prove clearly that the interest of the general public in the schools is so keen as to make it forever impossible for any influence to make the schools the football of machine or personal politics.

## II. THE GENERAL CONCLUSIONS OF THE INQUIRY.

Your Committee has summarized the main conclusions and constructive suggestions upon which its investigators are in general accord. In presenting this summary the Committee wishes it clearly understood that it is not in a position to pass final judgment upon the worth of those recommendations which deal with problems requiring treatment at the hands of those qualified by academic training and practical experience. They are listed herein in their logical order and in brief and conclusive form. All the suggestions which deal mainly with educational matters have financial significance. The more obvious facts of financial import are pointed out by the Committee under the appropriate heads.

### CONCLUSION ONE.

**The course of study in all schools should be organized around human problems and made simple and elastic enough to permit of differentiation to meet the needs of different nationalities and groups.**

In a letter to Professor Hanus, dated September 6, 1911, the City Superintendent of Schools sets forth in detail how difficult it had been to establish a uniform curriculum of eight years.<sup>1</sup>

Professor McMurry, in his report upon "The Course of Study," has pointed out that the New York course of study is in some respects twenty years behind the times, that it is not organized around human problems, that it shows want of educational leadership, and that it is

social process now so influenced by the general principles which are fundamental to his science that it has become the chief means by which society seeks to accomplish a great variety of its purposes—to assist its helpless; to correct its delinquents; to improve its dependents; to equalize its opportunities; to preserve its resources; to lift up the lowly races; to amalgamate alien races; to preserve its hard-won wealth of culture; to perpetuate the results of its age-long struggle with Nature; to render stable the triumphs over the limitations of human nature; the process by which it seeks to realize in coming generations those ideals which are promulgated by the present as an aspiration or as a vision of possible attainment."

<sup>1</sup> The letter of City Superintendent Maxwell to Professor Hanus will be found on pages 69-97.



not fitted to meet the needs of the pupils. He states in reply to criticism of his report that the local system does allow the teachers of special classes for backward and ungraded pupils to follow their own curriculum, teachers of cooking and reading to vary the course according to local conditions, and kindergarten teachers infinite variation in their work. The point of his criticism is that this differentiation should be extended to other subjects. As regards drawing, construction work, cooking and sewing, the investigator points out that:

"Nothing less than a complete change of viewpoint in the organization and development of the curriculum, in terms of both social values and child psychology, could do much to broaden the work as it ought to be broadened."

At another point he states:

"In spite of the fact that four-fifths of the children in some schools hear only foreign languages at home, while few in other schools hear anything but English, all are expected to spend approximately the same time in the study of English. And, of course, there must be overcrowding for some tens of thousands, and not enough work for other tens, while all suffer more or less."

Dr. Frank P. Bachman, in his report upon "Promotion, Non-promotion and Part-time," commenting upon the length of time it takes children to complete the elementary school course in this city, says:

"While pupils are, as we have seen, probably in attendance by fourteen on the average 7.2 years, 64.81 per cent. of all pupils thirteen to fourteen, exclusive of those graduating, continue in school between 7.2 and 8.2 years; 27.41 per cent. between 8.2 and 9.2; and 7.95 per cent. between 9.2 and 10.2 years. Yet less than 42 per cent. of the pupils entering the elementary schools of the city ever complete the course of study."

At another point this investigator says:

"That children need to remain one, two, three and even four years after becoming fourteen to complete the course of study—and some of them do not complete it even then—shows to what extent the proper length of the period of elementary education has been disregarded, and to what extent, considering the conditions under which children have to work, their progress is retarded by the excessive requirement that all of them shall complete the same course."

Dr. Calvin O. Davis, in his report upon the "High School Course of Study," says:

"We view this uniformity of prescription as vicious in principle and injurious in practice. It is undemocratic, unsocial, unpedagogical."

In another section of his report, in discussing the inadaptability of the general high school course for all who could or would profit by it, Dr. Davis says:

"It is certainly incongruous to provide a single uniform course for all pupils in the general high schools in a city with the diversified business interests, the complex social relations, and the individual difference in intellectual, physical, and moral powers found in New York City. Uniformity can operate advantageously only over a homogeneous body dominated by singleness of aim; not over a heterogeneous community with diversified aims and interests."

This same investigator, after comparing New York's course with that of ten other cities, as regards the scope of work offered in the general high school course, the intensiveness with which the many studies are pursued, and the flexibility with which the work is administered, concludes that New York ranks markedly below the majority of other cities with which it has been compared.

In order to administer a course more extensive in scope and intensive in attack than New York's existing course it is pointed out that it will be necessary that changes be made in the uniform prescriptions for all students. While it will not be easy to introduce a differentiated course of study for all schools suited to the needs of the individual, it is by no means impossible. The inquiry has indicated how it can be done.

Professor McMurry suggests that:

"The principal and teachers of a school in one of the crowded sections of the East Side, assisted by the best talent among the superintendents, shall plan a curriculum for that particular school. In this way, all the inhabitants of the city might be shown what one good curriculum is. Since the upper West Side contains a very different kind of population, a curriculum for a particular school there might be planned in a similar manner. Thus, a second curriculum might be secured adapted to a particular situation. For a certain school in the Bronx, representing a third type of environment, and of pupils, a curriculum might be prepared under like conditions; and a fourth, fifth, and others might follow, according to the number of somewhat distinctive types of schools in the entire city.

"With the help of these curricula principals and teachers of other schools might take the initiative in preparing curricula for their own schools. If they lack ability, or energy, or power to coöperate with one another, or all these together, they could at least adopt outright one of the several types already developed, that most nearly fitted their own condition. In that case they would at least get a much better fit than any they now have."

Mr. Stuart Courtis, in the report upon the application of his tests to some 33,000 New York school children, has outlined clearly how by the application of his tests the course in arithmetic may be made to meet the needs of children of different nationalities, and of different economic groups, and further, how the Board of Education may ascertain the grade of ability required in different pursuits, so that it may train children to meet these demands without making the school the handmaiden of business.

The methods outlined in Mr. Courtis's report, and by Dr. Bachman, in his reports upon "Promotion, Non-promotion and Part-time," and upon "Over-age and Method of Determining Over-age," or scientific methods similar thereto, will, if adopted and developed, make it possible for the Board of Education, the superintendents, the principals and teachers to get a grasp on their problems at the beginning of each term, and will thus enable them to do their work much more efficiently. In this way a body of information will be furnished currently, which will serve as a basis for frequent changes in the course of study to meet the needs of the community. In the case of the high school course Pro-

fessor Davis makes the following statement concerning its proper adjustment to the individual and to society:

"The principals of the various high schools should be encouraged, in conjunction and cooperation with their respective teachers, to make thorough analysis of the needs and desires of the community in which their schools are located, and of the dominant interests and real needs of the pupils that enter their schools. They should formulate courses of study for their several schools in the light of their findings and the best educational insight they can command. Such courses of study, unless disapproved by their official superiors, should then be put into actual operation in the schools for which they were designed, and the result carefully watched by the Bureau of Investigation and Appraisal. Every five years it should be incumbent on each principal and his corps of teachers to re-analyze the entire local situation and, so far as found advisable, to recast the course of study anew. Only by adopting some such procedure can a course of study be kept in touch with the real needs of the community it is designed to serve and in harmony with contemporary educational principles."

Massachusetts and Pennsylvania have adopted differentiated curricula. Of all great cities New York can most easily develop differentiated curricula, because the different nationalities live for the most part in compact groups, and, when they move, they usually pass from one section of the city to another section inhabited by people of their nationality. For example, there are the Jewish, Italian, German, Irish, Finnish and Chinese settlements. Jewish people leaving the East Side of Manhattan usually go to the Bronx or to the Brownsville district of Brooklyn. It is only the third or fourth generation of Jewish immigrants who move to the upper West Side or to the other sections of the city where the school population is most cosmopolitan.

## CONCLUSION TWO.

**The content of the course of study should be made as practical as possible and special attention should be given to the development of commercial, industrial and vocational subjects emphasizing the larger and more important aspects of industrial and commercial activities.**

A course of study, built around human problems, and capable of differentiation and of adjustment to meet the needs of individual pupils should, according to the experts, use for illustrative purposes, as far as possible, customs, activities, pursuits and materials with which the pupils have had experiential relations.

Professor Hanus, in the "Report as a Whole," says that the program of studies in our public schools must cover:

- (a) The school arts—reading, writing, arithmetic;
- (b) Language and literature (modern and ancient);

- (c) History, government and economics;
- (d) Art (pictorial and plastic art, constructive art, and music);
- (e) Mathematics;
- (f) Natural science;
- (g) Manual arts and domestic arts;
- (h) Physical education, including physical training and athletics;
- (i) Vocational guidance.

Some school systems have made changes in the course in arithmetic and provide for the teaching of simple bookkeeping, which will enable children to keep simple personal and family accounts, before bank discount is taught. Elementary arithmetic is taught in terms of the store, the shop and the foundry, instead of in terms of general commerce and international trade. Professor Schneider has indicated in his report how such a course in arithmetic and other correlated subjects is not less cultural than the present course. He maintains that it is more cultural because it and other subjects taught in terms of actual life will help children to master their environment rather than to be mastered by it. In this connection it is pertinent to note that the Board of Education has directed that a trial be made of a course of study in arithmetic which was worked out by the Committee on Studies and Text Books and which is simpler and more concrete than the former course.

The fact that the industrial and commercial army is recruited, for the most part, from the elementary school, necessitates a differentiated course of study, according to Professor Hanus. In the "Report as a Whole" he says:

"It seems to me important that greatly increased flexibility in subject matter and administration should characterize the instruction of the last two elementary school years in harmony with the varying future careers of the pupils. Some of the pupils are going on to the high schools, some are going into industry or commerce or home life as soon as they are freed from school by the compulsory attendance law. Many of the pupils in these years are over age and have no interest in the usual 'academic' work beyond reaching the standard that will set them free. In any case a single uniform course of study for these pupils is not satisfactory in view of their different purposes; I suggest, therefore, that in a few schools, at least, the experiment be thoroughly tried and appraised long enough to really determine its value or the reverse, of a differentiated course of study; one for the pupils going on to the high schools, rich in the usual academic studies (including a modern language, if well taught); one for pupils going into industry, rich in the right kind of manual training and in the domestic arts for girls; and a third for boys and girls going into stores or other commercial shops, rich in elementary instruction in commercial subjects. While no one of these differentiated courses should neglect the subjects emphasized by the others, the dominant subject matter should be clearly evident to parents and pupils alike. Such differentiated courses are already established in a near-by State and are decidedly promising in ministering to social and individual needs, not only holding pupils in school, but giving them something of real value to them while they remain. There is every reason to believe that such courses might prove to be equally advantageous in New York City. This recommendation applies with special force to the intermediate school, to be discussed later."

It is obviously impossible for the school to create artificial shops, foundries, store and manufacturing plants, where pupils can be given

practical training under ideal conditions. The cost of such a procedure would be prohibitive if it were possible or advisable. Commenting on this situation, Dr. Frank V. Thompson, in his monograph upon "Commercial Education," says:

"Because the public school has hitherto assumed the responsibility for commercial education, commerce has felt no responsibility for it. But the experience in vocation (industrial) education points strongly to the general conclusion that the school unaided cannot deal effectively with the problem. Business men will need to go through the evolution of thought which is leading the manufacturer to assume his share in industrial education. *For reasons of efficiency, expense, and expediency, commercial training<sup>1</sup> will need to be divided between the school and the business house.* Business, like industry, formerly had a system of apprenticeship which will need to be reestablished in some form of coöperation with the schools. In the meantime, the schools must not wait; a plan which is immediately possible must be undertaken; and the practical coöperation between the school and business must be constantly aimed at."

In other words, as Professor Hanus states it:

"The solution of the problem of satisfactory commercial education must be solved in the coöperation of commerce and education, just as the solution of the problem of industrial education is sought in the coöperation of industry and education. Commerce, like industry, must recognize its responsibility to the thousands of young lives devoted to its service."

Dr. Thompson states at another point:

"New York City's commercial courses are academic rather than vocational. The general subjects in the course are in most cases not related to the vocational; the specific vocational subjects cover only a part of the vocation, and the lesser part at that. Compared with the vocational industrial courses taken as a type, the commercial courses under consideration have so small a connection with commerce that they cannot be strictly classified as vocational."

"The contemporary conception of commercial education in New York City should be largely extended, and should emphasize the larger and more important aspects of commercial activities, such as merchandising, salesmanship, business organization, and advertising."

It has been conclusively demonstrated by Dean Herman Schneider, of the College of Engineering of the University of Cincinnati, that the school and shop can work together:

"If the one common ground will be the mutually safe ground of the mental, physical and the moral advancement of those who work. This will seem to the superficial critic a too ideal basis on which to do business in this day and generation. He will probably agree that it is a nice scheme to have in mind, but an impossible one on which to operate. There is but one satisfactory answer to this, namely, that the thing is being done and is being done satisfactorily."

The satisfactory solution of the problem involving the relation of schools to industry, as stated by Dean Schneider, is found in education accompanying gainful employment—in the coöperation of industry and education. This coöperation, according to Dean Schneider, may be best effected in two distinct ways: by organizing coöperative or part-time vocational schools, and by continuation schools. The former is based on an agreement between the school system and a group of manu-

<sup>1</sup> Italics not in original.

facturers, whereby the manufacturers give appropriate shop instruction to groups of apprentices, and the schools the accompanying related theoretical and general instruction. The apprentices receiving this instruction are subdivided so that the two divisions of the group alternate between shop work and school attendance. The apprentices receive the usual apprentice pay for their work. The schools have no practice shops, since the industries themselves provide the shop training required. The latter, the continuation schools, are based on an agreement by the employers to release their youthful employees at periods when they can best be spared for a limited time, a half-day or a day altogether, per week, for appropriate instruction by the school system. In Ohio the law makes the continuation school compulsory.

Dr. Schneider says:

"Objection is frequently made on the part of shop owners to the coöperative system on the assumption that alternating sets of students would cause confusion and inconvenience to the shop organization. Experience covering a period of four years—at Fitchburg, Mass.; Solvay, N. Y.; and Chicago, Ill.—shows that this assumption is false."

It may be well at this point to call attention to the fact that the first steps showing the practicability of the coöperative plan suggested by Dean Schneider have already been taken in New York's day elementary schools and evening schools. Superintendent Shiels has introduced the plan in the evening schools, and it is now being tried out in Public School No. 4, Manhattan, through the coöperation of several white goods' manufacturers with that school.

The American Federation of Labor's Committee on Industrial Education reported, after careful study, in favor of the extension of the coöperative plan, and called particular attention to the fact that the plan did not permit of the exploitation of the schools by commercial and industrial interests.

### CONCLUSION THREE.

**The Board of Education should take necessary steps to effect the gradual elimination of teachers of special branches.**

The revision of the course of study along the lines indicated by the specialists employed by the Committee will make the gradual elimination of teachers of special branches possible, now numbering about 429, exclusive of kindergartens, and costing nearly \$500,000 per annum. In his report upon "The System of General Supervision and the Board of

Examiners," Professor Edward C. Elliott discusses the general, social and educational policies which condition the teaching of the special branches as follows:

"By their nature the effective development of the special branches presents not only numerous special problems of instruction and supervision, but, in addition, certain complex issues of general, social and educational policy. Notwithstanding the years of their testing, the special branches have not succeeded in attaining a recognized and guaranteed place in the program of studies of public schools. Their introduction has come only after an energetic and insistent campaign by those who have been convinced of their essential worth in popular education. Their further extension, after introduction and recognition, has been dependent upon various fortuitous circumstances, such as varying available financial resources, and the extent to which public interest has been aroused. Even with these things in mind the fundamental fact must not be overlooked that the successful incorporation of the special branches into the program of studies of elementary schools especially will take place only as the branches are in the hands of teachers and supervisors of training, merit, skill and balance.

"Our conclusion is that steps should be taken at once to render unnecessary the majority of the special teachers in music, drawing, and physical training, and to facilitate and hasten the effective qualifications of regular class teachers. Those teachers who are qualified should receive an appropriate salary bonus. As long as the teaching of these subjects is chiefly in the hands of a special group of teachers, not only will the public continue to have reservations as to the rightful place of such subjects in elementary education, but the regular teachers themselves will not be ready to assume responsibility for this special instruction, nor will principals consider it as among the objects of necessary attention."

The presentment of the City Superintendent of Schools, in his twelfth annual report, relative to the curtailment of the force of special teachers, explains the necessity for reducing the salaries of such teachers then in the service, or for abolishing a certain number of such positions, by the fact that the budget appropriations for the year 1911 were not sufficient to carry the then existing corps. "Had it (the curtailment) been deferred five years longer," said the City Superintendent, "it is probable that the special teachers of singing, sewing, physical training and drawing might have been dispensed with, without serious injury to the schools."

It was said by representatives of the Board of Education, during the budget hearings in October, 1910, that these teachers were employed because there was great need to improve the class work of the older teachers in the system, who received their education before new subjects were introduced into the curriculum and before many subjects in the course of study had been given a new content. It was made plain, however, that the work of the special teachers was not carried on under any direct control. The special teachers were teaching old teachers, as well as the new teachers, who were supposed to have been prepared in the city's training schools to teach the modern subjects.

Whether or not it will be more satisfactory for the system if these special teachers are taken over and given regular work, is a matter the Board of Education will do well to consider. The Director of Physical Training advises that the supervisors of this special branch should be the last to be eliminated.

### CONCLUSION FOUR.

**Each school as a neighborhood center should ally itself with neighborhood interests and take cognizance of local needs.**

There is a general agreement in the reports submitted to the Committee that the plan of procedure of each school should be dependent upon its individual conditions, and should not be controlled by the conditions in other school districts, as has been indicated in the foregoing discussion. If this plan be established, it is argued that it will then be possible for the school to function, not only with respect to local needs, but also as a center for the dissemination of culture in the entire city. As brought out by Dr. McMurry, this may be possible, provided the principal is made the real and not merely the nominal head of his school. To this end he and his teachers should take the initiative in making the curriculum in all subjects for their school. The possibility of carrying this into effect is undoubtedly conditioned by the amount of unassigned time which is allowed to the principal and his teachers.

The attention of the Committee has been called also to the overburdening of pupils with excessive home work, and home study assignments, especially so in the departmental grades and in the high schools, due undoubtedly to the lack of coördination among the several departmental teachers. In this connection the necessity for an investigation into this special phase of the school problem is emphasized, and the suggestion for frequent conferences of teachers in departmental and in high school grades on the subject in question is urgently recommended.

As to the syllabi furnished the principals and his teachers, Dr. McMurry recommends that such syllabi should discuss methods in a way that will in no sense tend to tie the principal's hands or those of his teachers.

Answers of principals to questions propounded by the specialists engaged by the Committee contain admissions by principals to the effect that their main efforts are directed to other matters than to the improvement of the instruction. Discussing the powers and duties of elementary school principals, Professor Elliott, in his monograph on "The System of General Supervision and the Board of Examiners," maintains that, while the by-laws make the principal "the responsible administrative head" of his school, and that the spirit of the by-laws places upon him a large supervisory responsibility, in fact, however, the principal has no real supervisory independence, or initiative, whatsoever. Professor Elliott says:

"Practically all of the constructive features of his work are under the immediate control of the Board of Superintendents, the associate superintendent, or the district superintendent. In the last analysis the ineffectiveness of the elementary schools of the city may be measured by the extent to which the principals fail to perform, or are prevented from performing, those activities that are the rightful functions of their offices."



In his report, entitled "Problems in Organization and Administration of High Schools," Dr. Frank W. Ballou has pointed out that the high school principals in this city are cramped in the same way that the elementary school principals are, and that they should be released from clerical and administrative routine, to the end that they may be enabled to contribute the results of their experience and their knowledge to the solution of high school problems. Dr. Ballou maintains that the principal can be released from routine work only by the standardization of the work of principals, heads of departments and teachers. Whether this means that provision must be made for especially qualified statistical clerks, of different character from those now assigned to do routine work, the Board of Education should take steps to determine.

Professor Elliott has pointed out that the weakness of the present system is its centralized control and its failure to provide for checking and evaluating processes. He says:

"The schools have lacked an audit that would exhibit how all that which is being attempted is being done, an audit that would reveal the degree to which the machinery of organization is adapted to its purpose; an audit that would display the essential facts of the census, attendance and rate of progress of pupils, the accomplishments of teachers, and an analysis of the real cost in money of the several and numerous activities that enter into school education. The more important of these facts New York City does not know to-day."

The Bureau of Investigation and Appraisal, suggested by Professor Elliott, if established would become the centralizing and unifying force in the system adjusted on an absolutely impersonal basis. He says:

"This bureau or division should be in charge of a chief or superintendent who is directly responsible to the Board of Education, and should be organized in such a manner as to enable it to serve as the central agency for the gathering and interpretation of statistical and other data with reference to the schools; and also for the carrying on of such investigations as are necessary for the rational development and expansion of the school system."

It is to be hoped that, if schools were organized to meet neighborhood needs, and if the work were standardized and organized, as indicated above, the arguments for small schools would lose much of their force. It would seem that, in view of the high cost of land and buildings, and the greater cost of administering differentiated curricula in small schools than in larger, that the city should not attempt to provide school buildings, seating only 1,500 pupils, until after the present methods of administering large schools have been revised, and it has been determined finally that small schools are necessary.

### CONCLUSION FIVE.

**The Board of Education should make a careful investigation to ascertain whether cosmopolitan or composite high schools offering several different courses of study or small high schools with differentiated curricula should be developed.**

The report of one of the specialists employed by the Committee contains a recommendation for small schools with specialized curricula.<sup>1</sup> Another report offers a type course of study which apparently contemplates the development of the cosmopolitan or composite type of high school.<sup>2</sup>

Your Committee does not attempt to pass final judgment upon the educational questions involved. It does, however, maintain that high schools with specialized curricula are unduly expensive, because they provide many small classes, and because more buildings are required, necessitating the duplication of auditoriums, gymnasias, playrooms and playgrounds. Experience has indicated that differentiation in the course of study is possible where pupils, pursuing different courses, may be gathered together to take certain special work in common subjects; for example, those taking the classical course may join with those pursuing commercial, manual training, or technical courses in making up a class in practical civics, elementary political economy, elementary chemistry, botany, physiology or physical geography. In small schools with a specialized curricula special classes in any of these subjects might be impossible, because of the expense involved in providing a teacher for a few pupils.

As a matter of general observation it is manifest that the cosmopolitan type of high school tends to obliterate class distinction, while the small specialized high school tends to emphasize class distinction. The plumber's son and the merchant's son walk about the same halls, recite in the same rooms and play on the same athletic teams of the cosmopolitan school, although pursuing very different courses of study. All sorts of problems relating to human life and human relations stand upon an equal footing in the cosmopolitan high school, whereas there is some danger that the extension of the small specialized high school with specialized curricula may tend to keep alive the class distinctions which have arisen in the past because of the different pursuits people have followed. It has been argued that the establishment of engineering courses in regular colleges has been instrumental in improving the social status of the engineer. Many careful observers point out that the establishment of vocational schools and the teaching of manual training and vocational subjects in the high schools have had the same effect. The establishment of small specialized schools may react in the opposite direction, and, if so, they may become undemocratic.

<sup>1</sup> Report of Frank W. Ballou, p. 67.

<sup>2</sup> Report of Calvin O. Davis, p. 221.

The New York City Central Council of Teachers' Associations, which has been studying the reports submitted to this Committee by the various specialists, has collected a great deal of information bearing upon this question. Their report indicates that the weight of educational opinion is in favor of the cosmopolitan type of high school.

Because of the density of population in New York City, we fear that the cost of small specialized high schools would be practically prohibitive. On the other hand, this same density of population makes feasible and economical the large high school building, as it makes possible a most intensive use of auditoriums, gymnasias and athletic fields. These last mentioned facilities make provision for outside recreational activities which belong in a modern high school. In the case of small high schools these facilities must be duplicated without providing for any activities which cannot be carried out as well in a larger building, where the daily program is properly organized.

Some of the difficulties met with in conducting the large cosmopolitan high schools are due to the fact that our schools have not adopted modern administrative methods, and have not standardized the work sufficiently to permit of a proper division of labor.<sup>1</sup> Steps should be taken to ascertain whether the educational problems involved cannot be met by careful study and appraisal of results.

### CONCLUSION SIX.

**The Board of Education, through the proposed Bureau of Investigation and Appraisal or other bureau, should establish a fact basis for its educational, administrative and financial work.**

It is impracticable for the Board of Education to deal intelligently with its many difficult problems, unless it has at hand basic data showing actual school conditions. If such data are not available, it is impossible for the Board of Education to know and to indicate to the city and to the general public what the fundamental achievements and needs of the system are. Most of the present reports examined during the course of the inquiry have been found to be unsatisfactory and inadequate. The information collected upon them has been, in many cases, found to be misleading.

The specialists engaged by the Committee agree in general that the current reports of the Board of Education should furnish data as to the following conditions in each school:

<sup>1</sup> See report of F. W. Ballou, Problems in the Administration of High Schools, page 67.

1. The number of boys and girls in each grade.
2. The actual size of classes.
3. The number of full-time classes, part-time classes and alternating classes.
4. The age-grade distribution of pupils.
5. The nationalities of pupils.
6. The number and actual size of available rooms.
7. The adaptability of classrooms and of the equipment of buildings and playgrounds.

With such basic data available the Bureau of Investigation and Appraisal, suggested by Prof. Hanus and his coöperating assistants, will be able to carry forward continuous studies of highly important educational problems. Many of these problems have been discussed in the investigators' reports submitted to this Committee. Some of these problems are indicated below.

(1) What is the proper size of an elementary school class and of a high school class? (See "Report on Promotion, Non-promotion and Part-time," by Bachman, and "Report on Problems in Organization and Administration of High Schools," by Ballou.)

(2) What are the proper limits of the period of elementary education?

(3) What should be the qualitative and quantitative requirements of the courses of study in the elementary school and in the high school? (See "Report on the Course of Study," by McMurry; "Report on Course of Study in High Schools," by Davis; "Report on Commercial Education," by Thompson, and "Report on Vocational (Industrial) Schools," by Schneider.)

(4) What should be the normal rate of promotion in classes? (See "Report on Promotion, Non-promotion and Part-time," by Bachman.)

(5) At what age is it best for the child to enter the elementary school?

(6) What has been the effect of part-time in the lower grades and in the upper grades; and in just what way is school progress affected thereby? (See "Reports on Promotion, Non-promotion and Part-time," and on "Over-age and Method of Determining Over-age," by Bachman.)

(7) What are the possibilities for the elimination of part-time?

- (a) By means of the transfer of pupils to other schools, by readjusting daily programs of study and time schedules, and by organizing intermediate schools. (See "Report on Intermediate Schools," by Bachman.)

- (b) By means of the Ettinger part-time plan, and its possible extension throughout the entire system. (See "Report on Promotion, Non-promotion and Part-time," by Bachman.)
- (8) How does the transfer of pupils from school to school affect their grade advancement?
- (9) Is it advisable to extend the group-teaching plan, now confined to the lower primary grades, to all the grades of the school?
  - (a) Economic advantages of the plan.
  - (b) Educational advantages of the plan.
- (10) To what extent may the school work be improved by the scientific measurement of individual abilities and aptitudes?
  - (a) By means of the Courtis tests. (See "Report on the Courtis Tests in Arithmetic," by Courtis.)
  - (b) By employing the Binet-Simon measuring scale of intelligence. (See "Report on Ungraded Classes," by Goddard.)
- (11) How may the available facts which relate to the compulsory attendance service and to the prevention and treatment of truancy be utilized for purposes of legislation, criticism, advice and administrative control? (See "Report on the Compulsory Attendance Service," by Burks.)
- (12) What are the possibilities for effecting a proper coöperation between the schools, the industrial trades and the commercial houses? (See "Report on Vocational (Industrial) Schools," by Schneider; "Report on Commercial Education," by Thompson; and the "Report on the Courtis Tests in Arithmetic," by Courtis.)
- (13) How may a proper standardization of teachers' ratings be established? (See "Report on the System of General Supervision and the Board of Examiners," by Elliott.)
- (14) What is the probable annual growth and distribution of the school population? (See "Report on Estimating for Budget Purposes the Number of Teachers Needed in the Elementary Schools," by Bachman; and the "Report on New York Public Schools—Delays in Their Location, Design and Construction—Remedies Suggested," by Armstrong.)
- (15) What provisions should be made for the wider use of the school plant? (See "Reports on the New York Public Schools" and "The Condition and Efficiency of Public School Buildings of the City of New York," by Armstrong; and the supplementary report on "The Economic Utilization of the Public School Plant for Educational and Recreational Purposes," by Howe.)
- (16) How does the system of ventilation in the classroom and the quality of air-supply affect the health and progress of school children?

(See "Reports on the Condition and Efficiency of Public School Buildings of the City of New York," by Armstrong; and joint report on "Ventilation Conditions and the Quality of Air Supplied to Classrooms in the City of New York," by Armstrong, Baskerville, Winslow and Lucas.

The fundamental purpose of the Committee's investigation was, as has been pointed out, to collect facts on school conditions and to show how statistical and experimental methods may be applied to the work of the schools, rather than to set up any definite and final conclusions as to the solution of local school problems.

Items 1, 3, 4, 6, 7, 10, 11, 12, 13, 14, 15 and 16, in the foregoing list of problems, have been studied during the course of the investigation. The study of these problems should be carried on continuously along the lines indicated in the reports, or in such way as the further conduct of these inquiries may indicate. Items 2, 5, 8 and 9 are merely indicated in the various reports.

The Board of Education has recently undertaken studies of some of these problems, or of problems closely allied thereto. There is the same need for continuous studies of all these vital problems. According to the specialists employed by the Committee, if the results of these studies are properly tested, and the related facts scientifically assembled, each half-year of school work will yield additional evidence bearing upon all these inquiries, and the Board of Education may safely depend upon such experimental data and evidence for its proper guidance. If the Board of Education will from this time on formulate definite programs for the conduct of its work, and make provision for testing that work as it progresses, the purpose of the inquiry will have been accomplished.

### CONCLUSION SEVEN.

**The Board of Education's Attendance Department should adjust its work so as to maintain discipline and control school attendance without resorting to police methods in checking truancy.**

The relation of the maintenance of discipline to compulsory attendance is obvious. Dr. Jesse D. Burks, in his report upon "The Compulsory Attendance Service," says:

"The compulsory attendance service, as at present organized and conducted, limits its functions very largely to the performance of police functions related to the enforcement of school attendance. Its investigations are directed chiefly to the immediate explanation and checking of truancy and irregularity, rather than to the discovery and

treatment of deeper causes. This point of view is not only made evident by the emphasis in the annual and current reports, which is placed upon the return of children to school, arraignment of delinquent pupils, and prosecution of parents; and by the relatively small attention to an analysis of family influences, physical and mental condition of delinquents, and cooperation of various social agencies, but it is distinctly stated by the superintendent of schools in his letter transmitting to the Board of Education the report on the enforcement of the compulsory education law for the year 1910-11. Commenting upon the relation of the work of attendance officers to that of 'visiting teachers' he says: 'The function of the former is to cure truancy; of the latter, not only to prevent truancy but to cure many other ills that arise in connection with exceptional pupils.'

The significance to the community of extending the attendance service beyond the mere control of truancy is further emphasized by Dr. Burks, in a statement of the distribution of pupils by grade and the extent of absence of pupils in regular classes for the half-year ending June, 1911. In this statement the expert shows that about 90,000 children were absent during the half-year ending June 1, 1911, for at least one school month; 30,000 of these having been absent over two full school months. Yet only 6,579 children were reported by attendance officers as having been truants for five days or more during the entire year. Dr. Burks says:

"At a time when the attention of school officers is so largely directed toward plans for reducing non-promotion, retardation and school mortality; when vast sums are being spent on special and ungraded classes and vacation schools, this contrast suggests broad possibilities for the extension and strengthening of attendance work. . . . Important as it unquestionably is to discover and control truancy in its incipency, it is obvious that the occasional truant is not the only problem maker. A conservative program of attendance control must find effective means for dealing with the very large number of children who, by sporadic absence for trivial causes, not only lessen their own chances for making satisfactory progress in school, but, by requiring an undue amount of the attention of the teachers, handicap those pupils who are regular in attendance."

With a view to facilitating the economical and efficient performance of the functions involved in a complete and well-ordered attendance service, the following proposals are submitted in Dr. Burks's report:

(1) That an organization, responsible to the Board of Education, be constituted—to be known as the "Attendance Bureau"—to which shall be assigned all functions directly concerned with (a) the enumeration of children of school age; (b) the determination of the fact of enrollment or non-enrollment of each child so enumerated; (c) the investigation of cases of non-enrollment and non-attendance; and (d) the prevention, treatment and cure of truancy, non-attendance and other irregularities of attendance.

(2) That administrative responsibility be completely vested in a chief of the attendance bureau, who shall devote his entire attention to the problems of administration, and who shall report directly to the City Superintendent of Schools.

(3) That a district supervisor be placed in charge of the attendance service in each of the administrative districts into which the city is divided for the general management of the school system; and that such district supervisors be made responsible directly to the chief of the attendance bureau.

(4) That district superintendents be given responsibility for conducting judicial hearings in such cases as may be brought before them on charges preferred by the supervising attendance officers; the decisions of district superintendents in such cases to be executed by the appropriate officers of the attendance bureau's staff; such decision to be subject to review by the chief of the attendance bureau.

Dr. Burks suggests that the staff of the attendance bureau be organized, on a functional basis, into the following four divisions:

- (a) Division of Enumeration and Investigation.
- (b) Division of Prevention and Probation.
- (c) Division of Discipline and Prosecution.
- (d) Division of Correction.

Serious administrative problems are presented by persistently unruly children, says Professor McMurry, in his report upon "The Quality of Classroom Instruction." In his analysis of the problem the expert argues that the character of some of the pupils in many schools necessitates a change of policy in the city in relation to corporal punishment. He recommends that corporal punishment be administered under the following restrictions:

- (a) That each child first receive a medical examination.
- (b) That, if possible, the written consent of the father or guardian be secured.
- (c) That such punishment be applied only in the presence of some adult witness.
- (d) That accurate records be kept of all cases of such punishment, together with the conditions that led up to them, and the mode of its administration.

Dr. McMurry states the advantages flowing from the infliction of corporal punishment, under the foregoing conditions, will be:

- (a) That the number of attempted commitments to institutions would be greatly diminished, thereby avoiding a great waste of time and energy on the part of district superintendents, principals and teachers.
- (b) That the mere knowledge on the part of the unruly pupils that they may be subject to corporal punishment for their wrong-doing will of itself make actual punishment unnecessary in a great majority of cases.
- (c) That the number of cases of corporal punishment in the city will be reduced below the number at the present time.



Relative to the foregoing recommendations of Dr. McMurry it is worth while to note that, while the necessity for administering corporal punishment in extreme cases undoubtedly exists, the extension of the principle of self-government, as now worked out in many schools, as an adequate means of disciplinary control in general, certainly merits serious consideration on the part of the Board of Education.

Unquestionably the disciplinary problem is, in a large measure, due to the presence of abnormal and subnormal children in the local schools. It is also due to poor teaching, for which Dr. McMurry says the teachers themselves are not entirely responsible, and to the imposition of an inflexible and uninteresting course of study unrelated to the concrete facts of child life.

It is certain that the abnormal and subnormal types should not be handled in the regular school grades. In his report on ungraded classes Dr. Henry H. Goddard has indicated that the present methods of discovering and handling such mentally defective children now in the regular schools are entirely inadequate. Whether these children are to be held under the régime of the public school, or to be placed under custodial care, after passing through some such institution as the so-called Clearing House for Mental Defectives now established and in coöperation with the Department of Charities, only the carefully appraised results of future investigation and experimentation will indicate with any degree of reliability.

The success of the work in the division of discipline and prosecution and the division of correction proposed by Dr. Burks is dependent upon the right kind of coöperation between the Compulsory Attendance Department of the Board of Education and the various children's and magistrates' courts in the city. It has been suggested by the Committee that periodic conferences be held of representatives of all the correctional agencies, at which plans could be mapped out for the effective conduct of such work. Several of these conferences have already been held, and, as a result, the coöperation of the Board of Education has been gained, and probationary classes have been established in a few schools in Manhattan as an experiment. Judges of the Children's Court and the magistrates may now parole children to attend these classes.

The fact that most delinquents are young, abnormal and subnormal boys and girls, as has been pointed out in the reports of the various prison boards and commissions, clearly indicates the necessity for the examination of all children during their school period, in order to ascertain their physical and mental condition and their respective tendencies.

## CONCLUSION EIGHT.

**The educational administrative work of the Department of Education should be reorganized.**

After setting forth with convincing clearness the necessity for discrimination between the different types of control, which he denominates "legislative," "administrative," "supervisory" and "inspectorial," Professor Elliott says:

"All of the evidence considered during the conduct of this portion of the Inquiry has revealed and emphasized this important fact, namely, that there seems to be nowhere, at least within the school system, a clear and conscious discrimination between those that are supervisory or inspectorial. The absence of this distinction in the minds of those charged with the main responsibility, has been, it is believed, an important factor in retarding the progress and complicating the development of the public school system."

In commenting upon the existing plan of control the same investigator says:

"It is relevant at this point to indicate one of the principal conclusions of the Inquiry. That, under the existing organization and mode of operation, the schools of the city are under the continued necessity of reacting to a maximum amount of external administrative control, are influenced by a minimum amount of competent expert and constructive supervision, and do not receive the benefits of regular inspection, and of unbiased estimates of the value of their methods and products. The major energies of the supervisory staff, including the city superintendent, associate superintendents, district superintendents, supervisors, directors, as well as principals and assistant principals, are assumed by the general administrative and routine, clerical duties. Altogether too little genuine and progressive leadership influences the work of the teachers or the accomplishment of pupils. This general situation is, in large measure, due to the previously mentioned failure to distinguish between the essential administrative, supervisory and inspectorial forms of control. In this connection the mere business of external organization and operation of a system of public schools for a rapidly expanding city of a diverse population of five millions has been, it must be admitted, a disturbing factor of no small influence.

"The schools have been maintained under a form of control that is distinctly administrative and mechanical; a form of control that has not kept a single eye on the real substance and worth of teaching and education. The schools have not been kept, however, under the influence of that effective supervision and inspection which gives unity, purpose and high standard of attainment to the work of teachers. There is a striking lack of consciousness within the school system of the radical difference between merely keeping the schools in operation and keeping the schools in operation so as to produce tangible results of high quality. The organization of the school system has been from the top down rather than from the bottom up; a procedure as obstructive to progress and real growth in education as it is in other human institutions."

'As to the relation of teachers to the administrative heads of the system, Professor McMurry says:

"They do not feel free. They are given no authoritative voice in helping to select the curriculum that they must present, or in dividing the time among the several studies, or in choosing the text books that they use, or often, even, in determining the methods that they follow. On every hand they are directed what to do, and how to do it.

"One reason for these many limitations is the fear, on the part of the higher authorities, of serious blunders by weak teachers. But the effect is that the teachers, as a body, are treated as weak teachers, and distrusted.

"There is lamentable lack of inspiring leadership by those persons in authority over them, i.e., the principals, special supervisors, and superintendents. The main

relation of superintendents to them is that of inspectors merely, or judges, not of helpers; and the principals are too busy with other matters, or unable, for other reasons, to come to their aid in a vigorous, constructive manner. In consequence, no one in the system is discussing aims and principles with them and showing how these should affect their teaching.

"This is the expression of conviction held by teachers. There are many exceptions, partly due to the school, and partly to the individual. But our findings convince us that such exceptions are unusual. Our findings further convince us that the teachers as a rule, are conscientious and energetic; also, that, in respect to their profession, they are static and depressed."

Commenting upon the work of principals as supervisors, Professor McMurry says:

"The separate lines of work, called studies, that are pursued in each grade, are determined by the Board of Superintendents. Aside from one slight option in the eighth grade, the principal has no authority in this matter."

He states that the principals lack authority "as to the content of each branch of study, as to the amount of time for each study, as to the method of teaching," and, further, their authority is diminished because the district superintendents and special supervisors deal directly with the teachers, with respect to many vital matters.

As has been stated under recommendation four above, the reorganization and standardization of the work of each school will leave the principal much needed free time for supervision, which he does not now possess, and he may then become the real, not merely the nominal, head of his school.

Professor Elliott states his conclusions concerning the supervisory position and function of the district superintendent, as follows:

(a) While the general theory of the plan of the district superintendent in the supervisory organization is a sound one, this theory is not, as to its essential elements, carried out in practice.

(b) The supervisory districts are too large to permit the district superintendents properly to fulfill their responsibilities as supervisors. Many of these should be transferred to the principals of schools.

(c) The existing method of selecting district superintendents too narrowly confines choice to those whose education, training and experience have been entirely within the city.

(d) The absence of a definite and high standard of qualification for selection and retention of district superintendents has limited the supervisory usefulness of these officers.

(e) The relation between the Board of Superintendents and the district superintendents is such as to restrict unnecessarily the freedom, initiative and responsibility of the latter, with respect to matters of fundamental educational importance. Provision should be made for the larger participation of the district superintendents in the making of educational policies.

In beginning his comment upon the work of the City Superintendent and the Board of Superintendents, Professor Elliott says:

"It is pertinent to indicate here one very significant aspect of the whole general problem of supervisory control. Obviously, much of the most useful information and evidence relating to the methods and effectiveness of the work of supervisory officers of a complex school system are desirable only from judicially tempered individuals within the system itself. We have been brought into contact with many such persons who, as teachers, or principals, or superintendents, were willing to bring forward unbiased and substantiated testimony bearing directly upon the objects of the investigation. However, except in the case of a few negligible and minor matters, they were expressly unwilling to permit themselves to appear as witnesses of record. The explanation for this disinclination invariably given was that the expression of critical judgments militated seriously against their professional standing and advancement. This attitude of those within the schools, indefensible though it appears to be, has been so marked as to warrant this special mention. For the circumstance reflects a condition of affairs wholly detrimental to the progressive development of the best interests of the school."

After calling attention to the preëminent achievements of the City Superintendent of Schools, Professor Elliott continues:

"Mechanical consolidation, with the resulting standardization of aims and values has been effected. The next epoch of educational control will need to be dominated by the idea of establishing a scheme of decentralized, coöperative, expert supervision. Military standards of authority and organization cannot be permanently adapted to the enterprise of education. Education, particularly public education, is a great coöperative undertaking, and therefore, must make provision for the initiative independence and creative activity of every individual charged with responsibility. The administrative efficiency of a great, complex school system demands a high degree of centralization of administrative power. On the other hand, the supervisory efficiency of the school system is conditioned by a degree of coöperation which has not yet been fully comprehended by the City Superintendent. Machinery stifles individuality: coöperative effort expands individuality. The teaching of children and the direction of their education are dependent, ultimately, upon freedom, not repression.

"The preëminent difficulty of the existing situation arises, as has already been pointed out, from the failure clearly to distinguish between effective administrative control and effective supervisory control. In so far as the City Superintendent is an administrative officer, his powers should be broad and direct. As a supervisory officer, he should be the executive agent of the supervisory and teaching staff. In several respects his administrative authority should be enlarged. This is especially true with regard to many of the activities now under the control of the Board of Superintendents. The scope and method of his supervisory functions need to be submitted to thorough study and investigation far more thorough than is possible during the present inquiry. Consequently, it has been recommended that the Bureau of Investigation and Appraisal, as proposed in this report, undertake to define the legitimate functions of the City Superintendent as a supervisory officer, with the end of securing to the schools the benefits of the great amount of productive power which, under the present organization, must be latent. The proposed plan of reorganization of the supervisory staff and the creation of the Supervisory Council is merely suggestive of the idea of efficient, coöperative organization."

Professor Elliott also recommends that the Board of Superintendents be abolished. He maintains that great confusion and duplication of work has been caused by the lack of proper division of functions, and because the Board of Superintendents has endeavored to be a sort of a Board of Education, as well as a board of educational supervisors. Through the adoption of by-laws divesting itself of its own authority the Board of Education has increased this confusion.

The report of Professor Frank J. Goodnow and Dr. Frederic C. Howe, on "The Organization, Status and Procedure of the Department of Education," confirms the recommendation of Professor Elliott that the Board of Superintendents be abolished. In this connection it emphasizes the necessity for the abolition of the Board of Superintendents as a board, and further recommends that the associate superintendents be retained in the system as assistants to the City Superintendent.

On examination of the facts brought out in Professor Elliott's report, and in the report of Professor Goodnow and Dr. Howe, it is evident that the Board of Superintendents should be either abolished or else the work of that board should be completely reorganized.

The report of Mr. William A. Averill, dealing with the office work and the organization of the files of the City Superintendent and the Board of Superintendents, presented to your Board on July 15, 1912, the report of Dr. Goodnow and Dr. Howe, and the statements of members of that board to this Committee, at hearings conducted by it, indicate that Professor Elliott is correct in stating that the present division of work burdens the associate superintendents with a mass of routine and prevents their giving attention to higher educational problems.

Members of the Board of Superintendents have stated to this Committee, in the course of hearings, that they should be furnished with confidential examiners, who could take the burden of routine off their hands, and that the ordinary routine work could be carried on by a good male clerk and a well-organized bureau of information. As regards the character of this routine, Professor Elliott's conclusions are:

"While it may be argued that all of these items necessitate action by the Board of Superintendents, in compliance with legal requirements, the contention that the machinery of the Board of Superintendents is unnecessary to secure proper administrative control, and too complicated to secure prompt and well considered action on matters of moment affecting the welfare of the schools is still upheld. The usual order of procedure, whereby a multitude of routine matters must go from the school to the district superintendent, from the district superintendent to the Board of Superintendents, there referred to one of its committees for investigation and reported back to the Board, then from the Board of Superintendents to the Board of Education, there referred to one of its committees for consideration, from the committee to the Board of Education, thence back to the Board of Superintendents, is one that would not be tolerated by a well organized industrial or commercial establishment. Indeed, such establishments could not be maintained under such a policy of multiplex checks and balances. The public educational system is one of the city's largest business undertakings. There is no reason why it should not be brought under that general régime of control that has been found necessary for the effective control and economical direction of commercial institutions."

It is the consensus of opinion among the specialists engaged by your Committee that it is absolutely essential that the teachers and principals be given a direct voice in the administration of school affairs, and that Professor Elliott's recommendations for the creation of a supervisory council, having a definite legal status, should be put into immediate operation. President Churchill of the Board of Education

has, from time to time, given expression to this same idea, and has given a great deal of attention to the problem. Whether the Board of Superintendents is retained or not; it is argued that the same need for the council will exist.

The conclusions of Professor Hanus and the specialists working under his general direction, and the conclusions of Dr. Goodnow and Dr. Howe indicate that, if the proposed Bureau of Investigation and Appraisal should carry on continuous inquiries, along the lines suggested under conclusion six, the basis for the gradual adjustment of supervisory control to the needs of the system will be furnished. Certainly this inquiry has made it perfectly clear that satisfactory supervisory work cannot be properly carried on unless a fact basis is established for administrative action.

### CONCLUSION NINE.

**The Board of Education should carefully supervise the operation of heating and ventilating systems installed in the different public school buildings.**

The investigations carried on for this Committee by Mr. Armstrong, Professors Baskerville and Winslow, of the College of the City of New York, and by Doctor Lucas and Mr. Knox have given careful, scientific proof that public school ventilation conditions are very good in five-sixths and bad in one-sixth of the schoolrooms investigated, and that the air supplied public school buildings is frequently too hot.

The main conclusions in the Baskerville-Winslow report are as follows:

1. "The result of our investigation is to indicate that in general the air of the New York school rooms, so far as we have studied them, is in good condition, free from excessive dust and bacteria, reasonably low in carbon dioxide, cool and well regulated as to temperature, though somewhat dry. It must be clearly understood that these statements are general ones and subject to important exceptions to which attention will be directed later.

2. "While schools as a whole appear to be satisfactory, so far as air conditions are concerned, it must be pointed out with emphasis that there are a number of exceptions to this general rule. In about one-sixth of the school rooms studied we found distinctly bad conditions, so far as temperature and carbon dioxide are concerned. In certain schools, as strikingly indicated by our thermograph charts, extravagant variations of temperatures with gross overheating are the rule rather than the exception, and the effect upon the health and efficiency of the children must be a serious one. So far as we can discover, these bad conditions are not due primarily to faults of construction in the ventilating systems, but to careless operation on the part of the janitors in charge, or to interference with the janitors by teachers. The latter condition we have good reason to believe has caused the trouble in certain cases. These bad schools

are in the sharpest contrast with the good results obtained by conscientious and skilful and unhampered janitors in other similar buildings.

3. "In view of the fact that our investigation shows that certain rooms in certain schools are receiving an inadequate air supply, and that in some cases the temperature of the incoming air is excessively high, we believe it would be of advantage to have an occasional study made in each school of the temperature and volume of the air at the room inlets. We, therefore, recommend that provision be made for such study as a part of the duty of the visiting engineers, such as were recommended to supervise the operation of heating and ventilating plants by the Special Committee on Ventilation of Public School Buildings of the Board of Education a year ago."

Some of the conclusions of the experts may be acted upon at once. Other conditions require further investigation. The Committee is glad to report that its work will be carried forward by a commission, appointed at the suggestion of the Association for Improving the Condition of the Poor, headed by Professor Winslow, using funds generously supplied by Mrs. A. A. Anderson, of this city. It is to be hoped that the Board of Education will coöperate with the commission in the further conduct of the investigation.

### CONCLUSION TEN.

**A comprehensive plan should be worked out for the wider use of school buildings for purposes of recreation, for public assemblage and for civic and social gatherings.**

Mr. Charles G. Armstrong reports that the school buildings of New York City are used for regular educational work only 40 per cent. of their available working hours. The after-school use of school buildings is now administered by four departments or bureaus of the Board of Education: the Department of Public Lectures, the Department of Evening and Trade Schools, the Department of Recreation Centers, Vacation Schools, Baths and Evening Roof Playgrounds, and the Department of Physical Training. While these four departments, in many cases, use the same building in a way to necessitate the employment in some cases of three or four after-school principals or supervisors in a single building, the use of these buildings, according to Mr. Armstrong, falls very far short of being intensive. Whether or not a unification, or, at least, a closer coördination among the departments mentioned above, which have to do with the wider use of the school plant, may be brought about, is worthy of serious consideration. It has already been suggested that some plan be worked out whereby neighborhood groups and volunteer effort generally may be enabled and encouraged to contribute to the wider use of school buildings.

Your Committee has received suggestions from playground specialists and recreation authorities that the elements of true self-government should be experimentally tried out in connection with the wider use of the school plant. If it be true, as has been claimed by them, that the civic center method, involving local self-government and partial self-support, will multiply results, with a reduction of overhead cost and of local supervision cost, it is evident that an adjustment of the present methods should be made.

It is of interest to note that the cost of these various evening and recreational activities for the year 1912 was \$1,370,294, without, however, including any cost of the Department of Physical Training for evening work, or any cost for central office control or supervision.

Your Committee believes that an administrative economy might be effected through a unifying of the four departments concerned, in such a way as to concentrate the responsibility of the central office, the general supervisors and the principals, as indicated by Dr. Frederic C. Howe, in a supplementary report submitted to the Committee on School Inquiry. All the four departments enumerated above do some recreation work. All except one—the evening schools—are primarily recreational. At present, according to Dr. Howe, there appears to be no community of method, purpose or effort, either in the central office, among the general supervisors, or even between the principals of many varied activities which are conducted in the same building. He points out that all these activities, with the exception of evening schools, are essentially neighborhood and social activities. They cannot be effectively carried on, unless they are kept in continuous operation, and unless the institutional side of the work is supplemented by neighborhood effort.

Dr. Howe maintains that there is no reason for the present marked division between recreational and educational activities. He argues that recreational activities must become more and more educational in character, if the recreational work is to be most beneficial. On the other hand, as indicated in the other reports submitted to the committee, educational work must center around human problems and must be related to neighborhood needs. If this plan of school work is carried forward the line of demarcation between education and recreation will evidently be obliterated.



## CONCLUSION ELEVEN.

**The different administrative departments and bureaus of the Department of Education should be reorganized.**

### A. Secretary's Office.

It is recommended that the organization of this office be radically changed so as to relieve it of the purely secretarial work now performed for the several committees. This contemplates that the committee clerks who make up the largest part of the organization of this office be transferred to the several bureaus over which the respective committees now have jurisdiction. It is, however, recommended that within this office there be organized a central information and reference bureau, which will relieve the several offices of the Department of handling correspondence of a general or informational character. It will also serve as a reference library, in which reports and documents of educational value will be on file, and made available for the use of the members of the Board and the staff, who are always too busy to learn where the best information lies. As a result of their investigation, Dr. Goodnow and Dr. Howe conclude that formality, rather than business expediency, controls the policy of this office. They point out that important phases of this work are grossly neglected. For example, the indexing of minutes is not kept up currently for reference. Again, they criticize the office of the secretary for observing elaborate and wholly uncalled for methods in the handling of correspondence.

### B. Bureau of Audit and Accounts.

The Goodnow-Howe report both praises and criticizes the work of the Auditor of the Board of Education. The functional organization and procedure of the office and the use of modern statistical methods are especially commended.

The Auditor is, however, criticized for not developing information as to "salary accruals," requested annually by the Board of Estimate and Apportionment. The investigators prove that the Auditor's record and methods, bearing on this highly important matter, which involves hundreds of thousands of dollars, are inadequate, inaccurate, and fundamentally misleading.

They also call attention to the fact that the Auditor has failed to maintain a control over the detailed accounts of the Bureau of Supplies. In this connection it is pointed out that these accounts deal with the purchase and distribution of supplies aggregating \$2,000,000 annually.

"As a result of this lack of control and audit," the report maintains, "the information presented in the Annual Financial and Statisti-

cal Report, as to the consumption of supplies by activities, is not accurate. Also there is lack of agreement between the Auditor's statement, as to supply consumption, and those of the Superintendent of School Supplies. The latter, as pointed out in another part of this report, are more or less unreliable where they should be exact."

The Goodnow-Howe report recommends that the accounting system be amended and extended so as to properly develop (1) salary accruals, and (2) the information as to expenditures for a given period in correlation with the estimates for such period. The same report further states that the Auditor should at once assert the control prescribed by the by-laws over the detail stock accounts of the Bureau of Supplies, and effect periodic audits. With respect to the relation of this office to the Comptroller, Dr. Goodnow and Dr. Howe conclude that the charter vests in the Comptroller the same power to control the system of statistical records of the Department of Education as he has to control similar records and accounts of the other city departments. Their report recommends that the controlling accounts of the Board of Education be brought into harmony with those of the Comptroller, and that the Department furnish schedules and documents required for the purposes of auditing and accounting control.

### C. Bureau of Supplies.

The Goodnow-Howe report recommends that the accounting system in the Bureau of Supplies, which is at present inadequate and incorrect, should be remedied at once. To quote from the report:

"There is urgent need for a more systematic accounting for supplies. The accounts of this Bureau are maintained without reference to, and wholly independent of, the general accounts of the Board of Education, which are kept in the Bureau of Audit. The accounts and published statements of the Bureau of Supplies are not in harmony with the accounts of the financial reports of the Board of Education, and are not accurate. The accounting system of the Bureau fails to provide adequate control over the property of the Board which it administers. Based upon a system of single entry accounts, the procedure of the office does not insure accuracy. Errors are admitted in practically all the accounts. Furthermore, the information currently developed by the accounts is inadequate and insufficient for proper administration, and for presentation to the Board of Estimate and Apportionment. Salient facts which should be readily available and which have been requested by the Board of Estimate and Apportionment for budgetary purposes are not supplied by the Bureau of School Supplies. In this respect the organization and procedure of the Bureau are fundamentally weak."

The report recommends that the accounting system of the Bureau of Supplies should be revised without delay, and that such revision should contemplate a double entry accounting system, properly synchronized with the accounts of the Auditor of the Board and controlled thereby. Further, it advises that an independent inspection of supplies issued be instituted at the depository, and also emphasizes the necessity for a larger central supply depository. The deficiencies existing in the Bureau of Supplies, with respect to its accounting meth-

ods, have been pointed out. To correct such deficiencies, the Goodnow-Howe report presents as an appendix a detailed revised system of stock accounting, together with the direct and related procedure to be followed in the keeping of such accounts.

#### **D. Bureau of Buildings.**

With respect to the Bureau of Buildings the Goodnow-Howe report says:

"The internal organization of the Bureau of Buildings, subject to certain limitations imposed, is that of a well planned administrative unit. The Superintendent of School Buildings has given much thought and care to the problems of his office with the consequent attainment of various desirable results. . . . Building plans and details have been standardized to a considerable extent. The efficiency of the Bureau, however, cannot be well judged owing to the fact that records tending to show the full operations of the Bureau in relation to cost, are non-existent."

The cost in salaries of the draughting and inspection, of the Bureau of Buildings approximates \$400,000 annually. In this connection the report points out the inadequacy of the annual report of the Superintendent of Buildings. The compilation and presentation of data, showing the distribution of its cost along functional lines, is not shown in the report of the bureau. Such data are absolutely essential, and constitute the basis of any judgment as to the efficiency of the bureau's administration.

The report of Charles G. Armstrong states that the method of ascertaining and making needed repairs could be greatly improved. The organization of the bureau is fundamentally wrong, in that engineering work is consolidated with architectural work. Good administration will be promoted if the work is divided. Conclusion eleven contemplates the transfer of those functions of an engineering nature, now under the control of the Superintendent of Buildings, to an engineering Superintendent of School Buildings.

The functions of this engineering bureau, as pointed out in the Armstrong report on "The Condition and Efficiency of Public School Buildings," and in the Goodnow-Howe report, should be the installation, maintenance, repair and operation of heating and ventilating plants in school buildings.

The foregoing recommendation contemplates that the proposed Bureau of School Engineering should have full charge of all janitors and other employees engaged in the care and cleaning of buildings.

It is also recommended in the Goodnow-Howe report that the Superintendent of School Buildings properly extend the time cost accounting system, now partially installed by his bureau, and should also change the present method of purchasing furniture.

In order to test the efficiency of and the necessity for 117 inspectors attached to the Bureau of Buildings the report suggests that a

uniform time and cost system be installed, which will show at least the following:

(a) Cost of new construction inspection (payable out of corporate stock) under classification of the inspector.

(b) Cost of repair inspection involved by repairs under execution, specifically proposed, and certification of repairs executed. Cost for each should be shown separately.

(c) Cost of general inspection as to safety and need of repairs under classification of the inspector. Also the number and kind of any defects discovered affecting personal safety.

After the above data have been collected, during a period of at least three or four months, the Goodnow-Howe report suggests that a special committee of the Board, or a Committee on Economy and Efficiency, should examine the inspection slips and time-cost records used by the reorganized bureau, and should compare reports which will be rendered by the janitorial force with reports rendered by the inspection force, so that the actual value of general inspection work may be determined. Such information will furnish, according to the report, the proper supporting data for the budgetary estimate as to the size and cost of the inspection force.

#### **E. Office of the Supervisor of Janitors.**

The organization of the Department of Education, with respect to its system of supervision of the janitorial force, is considered defective. Such criticism is summarized by the investigators in the following statement:

"There is a lack of functional coördination in the existence of three separate and distinct administrative units, each of which independently functions with respect to closely related and interdependent classes of work concerned with the heating and ventilating of the schools. The Committee on Care of Buildings (acting through the office of the Supervisor of Janitors), although charged with the supervision of the janitorial force, exercises no supervision over the usage of fuel and janitorial supplies by the janitors. The Committee on Supplies (acting through the Bureau of Supplies) exercises this function without reference to the former, and furthermore supervises or attempts to supervise the janitors in the operation of their respective heating and ventilating plants through the instrumentality of the fuel efficiency engineer recently attached to the Bureau of Supplies. The Committee on Buildings (acting through the Bureau of Buildings) installs and repairs the heating and ventilating plants throughout the system, but has no authority or control over their operation."

Thus, it is pointed out that the technical supervision and control of the janitorial force is inadequate and ineffective. In such fundamentally important matters as the consumption of coal, oil, and other supplies, the condition of furnaces, etc., no records are kept in the central office that would enable the supervisor or his assistants to reach a conclusion as to the economical operation of any heating and ventilating plant in the system.

The urgent need for scientific records as to the operation of the heating and ventilating plants, and the necessity for the enlargement of the inspectorial force under the jurisdiction of the Supervisor of

Janitors, have been stated in detail in the report of Charles G. Armstrong, upon "The Condition and Efficiency of Public School Buildings," and in the joint report of this Committee and the Committee on Janitorial Compensation, submitted to your Board on March 25, 1913.

### CONCLUSION TWELVE.

**The accounting system of the Board of Education should be so adjusted as to make possible the fullest segregation of disbursement accounts along functional lines properly correlated with allied statistics, and their publication at least quarterly.**

The report of Dr. Goodnow and Dr. Howe states as a final conclusion that the revised Greater New York Charter of 1901 gives the Board of Estimate and Apportionment power to segregate items of the general fund appropriation for high schools and training schools for teachers and items of the special fund appropriation for the transportation of school children at special rates, and for the administrative officers of the Board and their subordinates.

The right of the Board of Estimate and Apportionment to subdivide the total authorization of corporate stock for school sites and buildings has been recognized in a decision of the Appellate Division of the Supreme Court, in the case of *T. S. Clark Co. vs. Board of Education of the City of New York*, rendered in May, 1913.

The Court held:

"That the attempt to justify the cause of action upon the ground of the absolute control of its fund by the Board of Education must fail. The amount expended for purchase of land and creation of schools does not come out of the general fund which is appropriated to the payment of teachers, appears in the budget and is raised by taxation, not, strictly speaking, out of the special fund, but from the issuance of corporate stock which is provided for by specific provisions of the charter. It has already been determined that while the Board of Estimate and Apportionment and the Board of Aldermen have no control over the salaries of the teaching staff, that said boards have the power to fix the salaries of all other civilian employees of the Board of Education. (*Hogan v. The Board of Education*, 200 N. Y. 370.) The creation of the funded debt is governed by the provisions alluded to for the issuance of corporate stock, and is entirely under the control of the Board of Estimate up to \$3,500,000, and of the Board of Estimate and the Board of Aldermen for sums in excess thereof. Discretion is therefore invested in such bodies. It is an unsound contention, as it seems to me, that if there is such discretion which may be exercised by the total denial of the request of the Board of Education, there is not included as a necessary part thereof discretion as to the purposes and objects for which such stock shall be issued. Said boards represent the whole city and all its interests. If the whole city is to be bonded said boards must certainly have the power to limit the various purposes for which said bonds, or, as now called, corporate stock, are to be issued. The Board of Education, to obtain the appropriation, conformed to the request of the

Board of Estimate and made a specific request for specific purposes. Those specific requests were granted. The Board of Education is bound thereby. *Non constat* they would have been granted and the corporate stock authorized otherwise. The Board of Education which has no control, other than by initiation, of the creation of this funded debt must respect the limitations put thereon by the boards vested with power and discretion."

Relative to the foregoing decision, that the discretion in the Board of Estimate and Apportionment, which may be exercised by a total denial of funds, carries as a necessary incident a discretion to define the purposes for which the funds shall be allowed, Dr. Goodnow and Dr. Howe maintain that "such an argument would apply with equal force to that part of the general fund in excess of the three mills appropriation and to the special fund included in the annual budget," but they point out that this latter assumption is "incompatible with the grant of independent educational policy-making power which the charter, as previously recited, has in rather conflicting and indefinite language placed in the hands of the Board of Education, and not in the hands of the Board of Estimate and Apportionment."

The investigators point out that the Greater New York Charter gives the Comptroller power, in Section 149-a and related sections, to accomplish directly any segregation of disbursements required by the City. The difference between a segregation before expenditure and after expenditure would, of course, be mostly formal, if the Board of Education complied with the Comptroller's requests pursuant to the provisions of the Charter.

The Goodnow-Howe report agrees with the conclusions approved by the Committee of the Chamber of Commerce, which investigated the City's accounting system, so far as these conclusions indicate that the City's accounting system and the segregated budget have greatly improved conditions existing in the City prior to their adoption.

It is pointed out, however, by Dr. Goodnow and Dr. Howe, that minute segregation will not be necessary if the Board of Education will furnish adequate estimates supported by adequate segregated statements of disbursements which the Comptroller has power to require from the Board of Education, as provided for in the Charter.

Hitherto the estimates presented by the Board of Education to the Board of Estimate, according to the report have been defective and inadequate. It states that no Comptroller has exercised his full powers under the above sections, which enable him to establish definite schedules and blank forms upon the basis of which the Board of Education shall keep its accounts and make reports. It is the conclusion of the investigators that the establishment of disbursement accounting by the Board of Education, under agreement with the Comptroller, will end differences between the two boards, and will obviate the unnecessary formality and red tape incident to the administration of a budget segregated in advance of expenditures.

Board of Estimate experiences indicate that no department has

heretofore adopted the system of segregated and correlated accounts which has been commended by the Comptroller, except as they have been required to do so in order to administer the segregated budget.

The Board of Education has practically refused to adopt the City's accounting system.<sup>1</sup> In the light of the conclusions embodied in the Goodnow-Howe report, the Committee believes that the Board of Estimate should ask the Department of Education to adopt this system at once, and, if it again refuses, the Committee recommends that the Charter should be amended so as to restore to the Board of Estimate the power it had until the charter revision of 1901 to segregate all budget appropriations of the Department of Education.

Current reports of expenditures, properly segregated and correlated with other data, should be published quarterly, to serve as a basis of administration and information for the Board of Education. The present system leaves the members of the Board of Education and the people too much in the dark as to the cost and efficiency of the work of the schools. As regards the right of the Board of Estimate to ask for definite evidence justifying budget requests, Dr. Bachman, in his report upon "Estimating for Budget Purposes the Number of Teachers Needed in the Elementary Schools," says:

"First, it is incumbent on the Board of Education so to present the facts to the Board of Estimate and Apportionment on the needs of the schools that if funds are allowed for a single teacher less than the number requested, just so much care and attention is denied a given group of children. Second, it is incumbent on the Board of Estimate and Apportionment, in view of other municipal activities and of the interests of the taxpayer, to refuse to vote public money on sentimental grounds; hence it is incumbent on the Board of Estimate and Apportionment to refuse to vote money for the day elementary schools until the Board of Education presents facts sufficient to demonstrate clearly what the needs of these schools are. Such facts have not been presented to the Board of Estimate and Apportionment in the past.

"In preparing the budget estimate for 1911 the estimated register for which provisions were requested was based on an increase in register of December over the preceding May for 1902-1909 inclusive. When the needs of the school were thus estimated, requests were made to care for an increase in register for the Fall term of 1910 of 28,000. The actual average annual increase in the register of December over December for the years 1902-1909 inclusive, was 21,707. It is, therefore, obvious that the estimated increase in register of 28,000, for which budget provisions were requested, would have provided for at least 6,000 more pupils than there was reason to expect there would be in the schools in December. It became clear at the hearings before the Budget Committee of the Board of Estimate and Apportionment in October, 1910, that this method of estimating the increase in register gave an inflated estimate of the needs of the day elementary schools and, as a result, this method has not been used since."

Radical changes must be made in the form and content of the annual budget estimate of the Board of Education, and a great deal more attention should be given to it than the Goodnow-Howe report shows the Board of Education has given heretofore. This report points out the following inadequacies in the Budget Estimates of the General and Special School Funds submitted by the Board of Education.

<sup>1</sup> See Goodnow-Howe Report, Part I, Chapter 3, Vol. III.

## A. General Fund Estimates:

(1) "The probable amount of salary accruals is not shown in proper form nor is it based on adequate data.

(2) "The items of the estimates are not comparable with the experience of the department in previous years.

(3) "The estimates of the growth of the system on account of the probable increased registration is not conclusive in relation to cost.

## B. Special Fund Estimates:

(1) "Schedules Nos. 1 and 2 for 'general supplies' and fuel respectively are not based upon an adequate knowledge of past experience or of stock on hand.

(2) "Schedule No. 12 for 'repairs and replacements' is not supported by sufficient detail evidence."

In conclusion the report states:

"The Board of Education has not, in the case either of the estimates for the General School Fund or in those for the Special School Fund, always furnished the data which the Board of Estimate and Apportionment deems it necessary that it shall have, in order that it may reach an independent judgment as to the amounts of money it has under the law discretion in granting or refusing to grant to the Board of Education.

"Indeed, the inability of the Board of Estimate and Apportionment to secure from the Board of Education the information which the former felt to be imperatively necessary in order that it might act intelligently in the consideration of the school budget, has been the main cause of the inauguration of the present school inquiry. So long as the law imposes upon the Board of Estimate and Apportionment, as it does at present, the responsibility for determining what amounts of money shall be granted to the General School Fund in excess of the three mills and to the Special Fund, that Board is in duty bound to satisfy itself to the best of its ability as to the propriety and expediency of the estimates sent up to it by the Board of Education. The Board of Education is, on the other hand, disregarding the law if it refuses on demand to comply with the requests of the Board of Estimate and Apportionment for information. It is not only disregarding the law, but is also unnecessarily hampering the operation of the city government. The estimates which it sends up, consisting as they do in so many cases, of mere statements unsupported by data upon which an independent judgment can be based, have to be recast in the Comptroller's office before they are formally acted upon.

"Even if it be admitted either as a matter of law or from the viewpoint of expediency, that the Board of Estimate and Apportionment should not segregate all the items of appropriation in the Special School Fund nor recommend an apportionment of the General School Fund, it is nevertheless true that it is absolutely necessary that the Board of Estimate and Apportionment be furnished with comprehensive and intelligible data with regard to the details of the service for which estimates are presented.

"The non-compliance of the Board of Education with the requests of the Board of Estimate and Apportionment for information relative to the estimates for both the General School Fund and the Special School Fund appears to us to be due mainly to the fact that the accounts and records of the Board of Education have not been kept in such a manner as currently to develop the information desired as a proper basis for estimating the needs of the schools. Our suggestion is,—

"1st. That the Comptroller exercise his powers under section 149-a of the Charter, by requiring the Board of Education to set up and keep such accounts and statistical records as will develop the information desired by the Board of Estimate and Apportionment; and

"2nd. That in case it is ascertained that the present organization of the Board of Education is not adequate to the task imposed upon it by such orders, provision be made by the Board of Education in its estimates and by the Board of Estimate and Apportionment in the budget for such an organization."



## CONCLUSION THIRTEEN.

**The Board of Education should provide for the collection and tabulation of all current data needed in order to enable it to know in advance what additional seating capacity is actually required throughout the city.**

The Board of Education has not, up to a year ago, had proper or sufficient evidence at its disposal when considering the needs of the city and the expansion of the system, as has been pointed out in reports to this Board and in reports of the Vacant Lands Committee to the Commissioners of the Sinking Fund. Despite the fact that \$51,222,745 was expended on sites and buildings between 1904 and the end of 1909, and that there were, according to the report of the City Superintendent, 40,000 more seats in school buildings than there were children to use them, in 1910 there were 54,000 children on part-time. This was largely due to the fact that the Board of Education had never had at its disposal information demonstrating that the new buildings secured through the expenditure of \$51,222,745 would provide seats where the children could use them.

There are now over 80,000 children on part-time. The existence of this condition has led to much discussion. Representatives of the Board of Education have blamed it all upon the city government, asserting that it is all due to the lack of funds and to city government interference with the work of the Board of Education. The representatives of the city government have often asserted that the above statements were made for political effect. Your Committee has felt that no public interest had been promoted, or could be promoted, by the passing of criticism where there was so little evidence at hand showing where the blame should be placed. Accordingly, the Committee directed Messrs. Charles G. and Francis J. Armstrong, consulting engineers, to make an exhaustive investigation into the whole subject, and to report back how the future needs of the schools could be known in advance, and delays in securing appropriations, in drawing plans and in construction avoided.

The report submitted by the consulting engineers will be found in Volume III of this report. It shows that the delays are due for the most part to the failure of the Board of Education to secure proper evidence of needs, to draw all plans as a unit, to advertise all specifications for a building at the same time. They are also due to the disposition of the different City departments to pass *de novo* upon the plans submitted by the Board of Education.

These investigators recommend:

- "1. The selection of sites by scientific means.
- "2. The elimination of 'useless formalities' by the establishment of an 'EFFICIENCY BUREAU.'
- "3. Foresight on the part of the Board of Education in designing and submitting for approval all plans of any one school at one time.

- "4. The adoption of STANDARD SCHOOLS.
- "5. Eliminating duplication of approval upon the same subjects by restricting each department to its charter duties.
- "6. The provision for efficient engineering within the designing department of the Board of Education.
- "7. The elimination of the 'lowest bidder' problem by the establishment of the 'BOARD OF CENSORSHIP FOR CONTRACTORS' and
- "8. The efficient use of the present equipment."

The foregoing recommendations may be adopted without increased expenditure, and will effect momentous saving in time and city finances, according to the engineers.

#### CONCLUSION FOURTEEN.

**The Permanent Census Board should be utilized by the Board of Education and should eventually be transferred to the Board of Education.**

As pointed out in the preliminary reports of this Committee, filed with the Board of Estimate on July 15, 1912, the Board of Education has not made sufficient use of evidence collected by the Permanent Census Board. This Census Board was created to collect information necessary to proper enforcement of the compulsory education law. As the enforcement of this law is one of the duties of the Board of Education, there is every reason why the Census Board should be transferred to the Board of Education. This will make the data now collected and that which should be collected by the Census Board available for the use of the Board of Education in making estimates of new buildings, of supplies and teachers required.

#### CONCLUSION FIFTEEN.

**The Board of Education should be reorganized and its membership reduced from forty-six to eight with sixteen votes as now distributed in the Board of Estimate and Apportionment.**

The Goodnow and Howe report recommends that:

A. "The Board of Education should be reduced in size to eight members, modelled on the present organization of the Board of Estimate and Apportionment; that three of the members should represent the city at large, to be appointed by the Mayor, and five should be appointed by the Presidents of the Boroughs to represent the indi-

vidual boroughs respectively; that to each of the members representing the city at large there be given three votes; that to each of the members representing the boroughs of Manhattan and Brooklyn there be given two votes; while to each of the members representing the other boroughs there be given one vote. We recommend that the terms of all the members be four years, so arranged that one-fourth of the members shall retire every year and that the entire membership be renewed every four years.

"As a possible alternative to the above organization all of the members of the Board of Education might be appointed by the Mayor, with proper distribution to boroughs and with voting power and length of term assigned as suggested in the preceding paragraph.

"Under the first proposal the Board of Education would more closely represent the opinions and needs of the various boroughs composing the city. Under the latter plan of appointment by the Mayor, responsibility would be more definitely localized than in the first proposal. The Mayor would become the fountainhead of education in the city, as he is at present, and could be held more easily responsible for the character and personnel of the Board of Education than if certain members were appointed by the Mayor and others were appointed by the Presidents of the different Boroughs. The latter plan would greatly increase the power of the Mayor. It would also center responsibility, as is now provided in the Charter for the executive heads of the other departments of the city.

"Either plan involves greater simplicity, increased responsiveness and responsibility on the part of the Board of Education.

"In addition to the above organization we believe that the Board of Education should be given greater freedom of action by the Legislature and should be hampered as little as possible in its internal organization by state laws. In addition its relation and financial responsibility to the Board of Estimate and Apportionment should be more clearly defined."

Relating to the present organization and its weaknesses, Dr. Goodnow and Dr. Howe say:

"The Board of Education consists of forty-six members, selected from the five boroughs and appointed by the Mayor for a term of five years, the terms of appointment overlapping in such a way that the Board is only partially renewed each year.

"The school Charter provides for an executive committee of fifteen members, with the president of the Board of Education as its chairman *ex officio*. The executive committee, however, has never assumed the functions expected of it by the Legislature. Under the by-laws of the Board fourteen separate standing committees are provided, of from five to nine members each. The superintendent of schools and the departmental heads of accounts, supplies, school buildings, and janitors are chosen by the Board, but are directly responsible to the committee having charge of these departments. The first four mentioned are statutory officials. This, in brief, is the skeleton organization of the Board of Education.

"Evils inhere, and inevitably inhere, in such a system of administration.

"The Board of Education is too large and too unwieldy a body. On this point all authorities seem agreed. As a result of its size and its internal organization,—

"(1) The Board fails to awaken a proper sense of individual responsibility on the part of its members.

"(2) Authority is so widely distributed between the Board, its committees and bureau heads that it is difficult, if not impossible, to locate responsibility.

"(3) The size of the Board reduced its attractiveness to men sincerely desirous of public service, but deterred from accepting membership on the Board because of the lack of opportunity for efficient work.

"(4) The Board is not responsive to the public or to the elected officials who are finally responsible to the public for school administration.

"(5) There is inevitable conflict of jurisdiction between the different committees; there is a necessary overlapping of authority. A diplomatic courtesy has come to prevail under which each committee defers to the action of other committees. This has resulted in the creation of miniature boards of education within the Board of Education, which in administrative matters are almost autonomous.

"(6) There is great waste of energy and ability. There is considerable waste in money for printing, for clerical assistance, etc.

"(7) Men of ability can make their influence felt only by indirection, by conferences, by circumlocution. The work of the Board itself becomes routine, petty and detailed rather than policy-making and legislative.

"(8) Most important of all, the size of the Board seems to have utterly defeated the main argument for its size. Members are not familiar with the whole school problem; they are familiar with a fraction of the problem. Neither the Board nor any committee of the Board is equipped to think or act as does the individual director of a city department; as does the Board of Estimate and Apportionment on city problems. Committee policies have been substituted for a comprehensive school policy. Aside from the instinct of men to amplify their departments and authority, the members of the Board have no means of becoming familiar with the school problem or with the schools as a whole. The size of the Board makes this impossible. The committee system accentuates the evil. The time of both the Board and its committees is absorbed with petty routine and administrative detail to the neglect of any large visioned policies of school development. A voluntary school board as large as the Board of Education, meeting twice a month in short sessions cannot, under the system which obtains, think or act as a policy-making, education forming agency. That is out of the question. The only reason which justifies a Board rather than a single administrative officer is destroyed by the very size of that Board. And that cannot be otherwise with a voluntary, unpaid Board of forty-six members.

"In our opinion it would be difficult to devise an administrative agency less adapted to the colossal task before it than that which has been created. The school budget is larger than any single department. It amounts to 24.83 per cent., or practically one-fourth of the total annual expenditures of the city for current expense. The Board of Education has under its control \$135,000,000 worth of property. It molds the education of 700,000 children, and performs many other activities. The political machinery provided by law for the administration of this, the largest single department of the city, is primarily responsible for the failures complained of.

"The internal organization of the Board of Education is a recognition by the Board of the evils inherent in its size. In order to obviate the conditions enumerated the Board has been divided into five distinct branches of administration, under five separate and, as regards each other, independent administrative officers, each of whom is under the control of one or more special committees of the Board of Education. These committees are, in their mutual relations, as independent of each other as are the administrative officers whose actions they supervise. Their work is not correlated or coordinated by the Board of Education or by any committee of that body. For the executive committee of the Board of Education, which was evidently provided by the Charter for the purpose of gathering in the hands of one authority all the work of the special committees, does not, except in the summer months when it acts for the Board, exercise any influence whatever over the school administration; while the Board of Education itself rarely modifies or controls the actions of its committees. Thus the Board not infrequently votes at one time on as many as twenty resolutions coming to it with the approval of the different special committees.

"We believe that one of the main causes for the establishment of so many special committees, the existence of which is in large measure responsible for the present disintegration of the work of the Board, is to be found in the size of that Board. In the case of a Board of forty-six members, the temptation to multiply committees in order to find places in sufficient numbers for as many members of the Board as possible is irresistible. The anticipation of the Commission which drew up the present charter, that the executive committee of fifteen of the Board of Education would really do the detailed work of the Board, which would thus be centralized in a few hands, has not been realized. There is no indication that it will be realized.

"In our opinion most of the undesirable conditions covered by this report, including the relations with the city as well as the internal organization of the Board itself, are directly or indirectly traceable to the size, organization and legal limitations of the Board of Education. Many of the educational and administrative problems covered by other reports are indirectly traceable to the same conditions. And just as many collateral evils of city administration corrected themselves with a simplification of the city charter, so many of the educational problems of the city would be corrected were the Board of Education organized on a simple, responsible and efficient

basis. In our opinion, until such a change has been made by the Legislature, many of these problems will continue to vex both the regularly elected city officials, the Board of Education and the educational staff, as well as the public at large. The reorganization of the Board of Education is a prerequisite to other reforms.

"From the point of view of business administration the School Board is not dissimilar from any other municipal department; it is not dissimilar from the building, repairing and care of streets, the managing of the water, dock or bridge departments. In the preparation of the budget the determination of appropriations, the accounting and disbursement system, the control of contractors and the employment of men, the Board of Education is subject to the same principles as those which have been found effective in other departments.

"Political reform in recent years has agreed upon the abandonment of complexity in political machinery. Everywhere simplicity and direct responsibility are being sought. The city council has generally been reduced in size. The Mayor has been given large powers. In New York, as in many other cities, he appoints and removes most, if not all, important administrative officials. The commission form of government, which has been adopted so widely in the West, is a recognition of the same principle. Everywhere the drift is away from large legislative bodies; everywhere, too, the change is being made from irresponsible boards to individuals appointed and removable by an elective official responsible to the community for his actions.

"This change has been marked by distinct advance in city administration. The success of the present charter of New York City is an illustration of the improvement which follows from simplicity in organization and the placing of responsibility upon a single individual whose acts can easily be traced and who can be held accountable for his appointments and his acts.

"The same evolution is manifest in recent school charters. The large unwieldy school board is being abandoned and a small board of five, seven or nine members is being substituted in its place. In Boston, the school committee consists of five members, in whom are reposed practically all powers of school administration except the selection and purchase of sites for buildings. This power is reposed in an independent committee of three members appointed by the Mayor. In Boston the school committee is elected by the people rather than appointed. The committee meets once a week in open session; it transacts its business as a committee of the whole, and disposes of an immense quantity of work in coöperation with the superintendent and heads of departments with efficiency and to the general satisfaction of the city.

"The recent school law of Ohio abolished a complex system and substituted a small board. Some of the members are elected at large, some of them by districts. The transfer from the large to the small board has been followed by an improvement in the character of the men elected; in a new feeling of responsibility on their part and an awakening sense of control on the part of the community.

"The school board of Chicago consists of twenty-one members, acting through three committees in close coöperation and harmony with the school superintendent and salaried administrative officials.

"In our opinion a board of eight members would be small enough to act as a body on all questions of policy if it abandoned the present administrative disintegration into a number of committees and did its work in the Board as a whole or as is done by the Boston and Chicago school boards in two or three committees.

"It would be large enough, by reason of the differences in voting power of its members and the districts from which its members are appointed, to represent adequately the various boroughs of the city and the various shades of opinion in the city on school matters.

"Attention may be called finally to the fact that such an organization of the Board would not be a novel one to the people of the city. The method proposed has been applied for over ten years to the Board of Estimate and Apportionment, and has, in the opinion of most competent observers, been successful in solving the very similar problems which are presented to that body."

It is further recommended in the Goodnow-Howe report that:

B. "The development of local school boards or other organizations should be undertaken by the Board of Education. There should be statutory power for the devolution of some of its authority to local administrative agencies, with power in the local

board to work out courses of teaching and activities suited to the nationality, industrial conditions and character of the neighborhood. Local groups should be given as much power as is consistent with a proper standard of efficiency for the city as a whole. The form of these local boards should not be provided by state laws. It should rather be left to the Board of Education. For such a scheme can only be worked out by experiment. Different methods might be tested out in different boroughs or in different sections. The powers of teachers, principals, district superintendents, as well as local authorities should be determined by by-laws of the Board of Education, with the aim of awakening the talent now dormant within and without the schools."

Conclusions One through Fourteen may be acted upon by the present Board of Education, without waiting for legislation, if the Board of Education holds to the idea that it is responsible for school work, and that laymen and experts, working together, may safely approach any of the problems calling for solution. Conclusion Fifteen is not made to embarrass the efforts now being put forth by the Board and its staff, but rather because it is the firm conviction of Dr. Goodnow and Dr. Howe that better work can be done if the Board of Education is reduced in size, as recommended.

### **The Import of the Inquiry.**

While the local inquiry was undertaken in order to tell the Board of Estimate how to spend the millions devoted to public education, to formulate a program in coöperation with the Board of Education for the development of the local schools, and to establish measures by which the local work might be currently appraised, it became necessary to state the fundamental aims of public education which have a special significance for this inquiry but which are national, rather than local, in character. Professor Hanus and Dr. McMurry set up provisional standards which they altered from time to time during the conduct of this inquiry. Their final standards will be found on pages 211 and 213 of this report.

The following epitome of the educational import of the school investigation in this City has been furnished by members of the staff of the Committee:

#### **A. The Place of Education in Modern Life.**

"Any educational standards must be regarded at present as provisional and temporary. The public school is an instrument of social development. Its existence testifies to the fact that the present economic and social order is not final. If education were subordinated to the present economic order its influence would become the more deadly as it became more scientific and compelling. It is therefore clear that the secondary school should not aim to determine a child's vocation definitely or to fit him for a certain calling. The various agencies of general society and higher education can do that. The elementary school should facilitate and simplify the process of economic selection, and should act as a transmitter between human supply and industrial demand.

"On the other hand, no formulation of education in terms of the idealism of a century ago can produce the type of men and women we have a right to expect from our public school to-day. Success along these old lines would entirely divorce the school from our present economic and industrial life. If such a division were possible

it would check economic evolution and produce maladjustments and moral shipwreck. It would be far better for education to remain in its much criticised present condition than for it to become an agency for perpetuating the present economic order and for rehabilitating the utopia of sentiment which characterized things intellectual before the industrial revolution of the last one hundred years took place.

"School work must take into consideration the nature of the child. Experimental psychology and investigation have clearly indicated that the child goes through many changes during his school life. These changes are affected by and in turn affect the child in school, in the home and on the street. Every boy and every girl is plunged first into one influence and then another. Uniformity of treatment is impossible. The school is just beginning to recognize fully that the old-fashioned uniform course of study has served only to confuse and impede the real success of school work. The play life and the home life of the child give vent to his individual and natural forces, but too frequently the school has truncated these forces at an early period. The successive bursts of instinct, interest and social tendency which characterize child life often die and are forgotten when adult life is reached. Thus it is the proper function of the school to act as an intermediary between the individual and society. Its primary duty is to inhibit the bad and develop the good inherent traits of the child, in the light of their relation to the social order.

### B. The Working Aims of the School.

1. "The school should inculcate knowledge. That is, it should teach the important facts and scientific truths, which, if generally possessed, would insure intelligent coöperation and competition among men. These are the general facts about the physical world, the simple facts about the development of life from the cell or embryo, the obvious fact about the mind and the will power and the necessary helpful facts about the make-up and growth of society. Simple concrete facts concerning all these are met with every day. The normal individual can be helped to discern them if the school adopts a proper educational method.

2. "The school should give to its pupils a mastery of method. The basis of this method is proper coördination between the child's mind and body; in a word, rational self-control. The school can assist in such coördination by the inculcation of purpose in the child, by teaching him to appraise the different values of things, by assisting him in organizing his ideas and finally by teaching him to forge ahead and exercise his initiative. But the desired mastery of method can be most easily assisted by the school through activities—constructive team-working activities related in a directly serviceable way to community needs and to the furnishing of an immediate economic stimulus to the child. A curriculum aimed at the teaching of method would therefore be built upon (a) productive work, (b) participation in economic distribution and consumption, (c) citizenship effort, (d) romantic interest embodied in æsthetic expression and group life and (e) natural science both as a subject matter and as a technique related to the other subjects. If the work is made concrete and direct enough it will be simple and attractive. It is present day abstraction that makes school work difficult and complex.

3. "The school should do its part to induct the child into life about him instead of divorcing him from it. This means not merely or primarily relationships within the school, but rather relationships with the general environment, whereby the successive psychic and psychological stages of child life would be progressively bound up with the general life toward which the child moves.

4. "The school should induct the child into industrial and economic life far enough so that his education will serve as a vocational aid. 'It should make the child feel that there is a suitable vocation open to him to which he may aspire.' As a separate responsibility of the school this duty does not become separate and permanent until toward the end of the high school course. It should always be a part of the three duties of the school stated above to keep the facts of industrial and economic life prominent, and they will have their place as a matter of course, if the work of the school is made sufficiently concrete.

5. "The school should give attention to physical education and correction of physical defects. These are involved in 1, 2, and 3 above, and in physical

examination which forms a part of the work of physical training. The correlation of school work with other public work such as that of the department of health, public charities, children's courts and public recreation, if properly carried out makes provision for the checking up of knowledge gained at school and the consequent moral, mental and physical readjustment of the individual to his environment.

6. "The school should educate for leisure. Citizenship and the higher values generally are coming more and more to be matters pertaining to the leisure hours, not to the hours of specialized work. Every child should be brought to realize the value of his leisure time and how to use it to the best advantage. If he is taught to make use of that leisure along with his family group, the yawning chasm between the city parent and the city child will be successfully bridged over and moral shipwreck will be prevented."

### C. Tests of Public School Work.

1. "What are its results; in what way are the six above aims of the school achieving results in the case of each child committed to its care?"

2. "Has the school system the elements of self-scrutiny? Is it applying tests to indicate its own efficiency or making reports to indicate progress or the reverse, and also whether or not tests imposed from the outside, such as Regents' examinations, are worth while as measures of city school work?"

3. "Has the school system the elements of deliberate experimentation?"

4. "Are the school principals free to adapt their curricula to localities, and are the teachers free to adapt their methods to special conditions or to their own personal kind of ability?"

5. "Is the school system correlated with other public institutions whose purposes are mainly educational, such as museums and libraries, with recreation and with the economic environment? Is there manifested a purpose making for such correlation?"

Your Committee has previously stated that it has not attempted to pass upon the educational worth of those parts of the various reports submitted to it which deal with purely educational problems. It maintains a similar position with respect to the foregoing analysis of the underlying significance of the reports of the school specialists, and merely presents the same for the consideration of the Board of Education.

## III. THE HISTORY OF THE INQUIRY.

### (1) The Origin of the School Inquiry.

The present administration, like its predecessor, came into office pledged to deal radically with the serious problems represented by over-age classes, children on part-time, whose parents considered part-time a serious evil, over-age children encumbering the lower classes, thus



aggravating part-time, and children discouraged by repeated failures. Just preceding the municipal election of 1909 the Russell Sage Foundation concluded an investigation which indicated that retardation was costing the city millions of dollars annually. Despite the fact that the Board of Education had, in 1904, taken steps to end school congestion, and that \$51,227,450 had been expended during the years 1904-1909, inclusive, for new buildings and sites, 156,200 children were reported as over-age for their grade in 1909, and 47,565 were reported on part time in September, 1909.

In 1910 the City Superintendent reported that the total number of available school sittings in Greater New York exceeded the number of children by over 40,000. Notwithstanding this fact, 54,000 were on part time. This meant that here were some 67,000 empty seats because they were not where the children could use them.

Notwithstanding this showing, a special committee of the Board of Education advised this board to appropriate \$8,000,000 a year for five years in order to end part time.

Although requested on June 16, 1910, to furnish data as to population and attendance, such as in the opinion of your Committee should have been considered by the Department of Education when locating new buildings and expending the \$51,227,450 corporate stock between the years 1904 and 1911 for sites, buildings and equipment, the Department of Education presented its request for \$14,083,920 corporate stock for 1911 unsupported by any data to show population or drift of population. Upon the refusal of the Board of Estimate and Apportionment to appropriate any funds until such supporting data were furnished, the Permanent Census Board was able to present the same in time for the consideration of the Budget Committee.

During the budget hearings of October, 1910, it became evident that the Board of Education did not have proper evidence at hand to show the need for funds requested in the budget estimate, and had not formulated the budget requests with any well coördinated program in mind. The Budget Committee found that for several years prior to the time the present city administration took office difficulties were experienced every October when the estimates of the Board of Education for additional teachers required to take care of expected additional registration of pupils, were considered. Each year the Board of Estimate and Apportionment has allowed fewer teachers than the school estimates called for. Each year the public was told through letters, meetings and formal statements that this board was crippling the schools by voting less than the flat five per cent. increase, or the later flat provisions for 28,000 additional pupils, which increases were yearly alleged by the Board of Education to be necessary. Hearings upon the 1911 estimates, conducted by the Budget Committee appointed by the present Board of Estimate and Apportionment, in 1910, called attention to the fact that the Board of Education did not have at its

disposal proper data on which to predicate its estimates for additional teachers, and that the Board afterward devoted to purposes not mentioned at budget time, alleged inadequate allowances for additional teachers. Instead of the increase of the school register being 28,000 in 1911, as estimated by the Board of Education, the actual increase of the December 1911 register over the December 1910 register was only 11,913.

As has been stated, the Department of Education has always maintained that part time, retardation, congestion, in short, those evils of the present school conditions which it considered major, could only be remedied by the erection of additional buildings. Preliminary studies made by the Russell Sage Foundation, the Bureau of Municipal Research and the experiences of Cleveland, emphasized the necessity for giving attention to the influence of teaching, discipline and the course of study in the elementary schools, as possible causes of these bad conditions.

Many teachers and principals stated frankly to representatives of your Committee that they could not possibly give the needed attention to teaching methods because of the onerous requirements of the course of study, which had apparently been worked out without reference to modern psychology. Lack of discipline was a matter of grave concern which many teachers felt they were unable to cope with under present by-laws and present conditions.

The lack of classified facts to support estimates emphasized that necessity, out of fairness to the children, as well as to taxpayers, for some method by which the Board of Education and the Board of Estimate and the public should be apprised currently of the essential truths regarding part time, over-size classes, over-age and retardation.

## **(2) The Resolution Ordering the Inquiry.**

The matter was considered at length in the Budget Committee of the Board of Estimate and Apportionment, and a special inquiry, under the direct control of this board, was determined upon. Accordingly, a resolution was, on October 26, 1910, passed by the Board, ordering such an inquiry, and authorizing the committee to be appointed pursuant thereto, "to associate with it such experts within and without the city government," as might assist it in the conduct of the inquiry and the formulation of recommendations to the Board of Estimate and Apportionment. The full text of the resolution ordering the inquiry is as follows:

"WHEREAS, The Budget of the Department of Education represents approximately one-third of the total appropriation of The City of New York for current administration purposes; and

"WHEREAS, The appropriation recommended by the Budget Committee of the Board of Estimate and Apportionment for the year 1911 for the purpose of the Department of Education represents an allowance of \$1,623,555 in excess of the three-mill tax appropriation required by law; and

"WHEREAS, in formulating the allowance for the purpose of the Department of Education this Board has been unable to secure sufficient and satisfactory information in explanation of requests for appropriations made by such Department to enable it to reach proper conclusions with respect to the necessity and propriety of such requests; and

"WHEREAS, It is the sense of this Board that efficient and progressive administration of the schools of the City of New York is indispensable to the welfare and progress of the city, and that generous appropriations for the purposes of the Department of Education are desirable in so far as assurance and evidence can be given that such appropriations will be expended for purposes and in a manner to promote the efficiency and welfare of the schools and to increase the value and effect of the instruction given therein; and

"WHEREAS, The growth and development of educational activities and improvement in educational methods actually present to this Board, in connection with the preparation of the tax and the corporate stock budgets, many questions bearing upon the efficacy of educational policies and methods now pursued, and upon the efficiency and economy of the administration of the affairs of the Department of Education; be it

"Resolved, That a committee of three members of the Board of Estimate be appointed by the Mayor to conduct an inquiry into the organization, equipment and methods, both financial and educational, of the Department of Education, including such plans and proposals as may have been formulated or may be under consideration by the Board of Education for extending and developing its educational activities, and that for this purpose the committee be authorized to associate with it such experts within and without the government of the City of New York as may assist it in the conduct of this inquiry and in the formulation of recommendations of this Board, and that it be further authorized to employ such assistants as it may find necessary for the purposes of this inquiry; and be it further

"Resolved, That for the above purposes hereinabove mentioned, the Board include an appropriation of \$50,000 in the appropriation of the Board of Estimate and Apportionment for the year 1911."

### (3) The Plan of the Inquiry.

The Committee appointed pursuant to the foregoing resolution arranged with President Egerton L. Winthrop, Jr., of the Board of Education to conduct a friendly and searching inquiry along constructive lines. After mature deliberation, the inquiry was divided into two branches, the first dealing with educational matters, and the second dealing with financial and administrative matters.

✓ Professor Paul H. Hanus, head of the division of education, Harvard University, was employed to take general charge of the educational aspects of the inquiry. Professor Hanus nominated his own assistants and his selections were in every case approved by the Committee. Early in June the Committee indicated to Professor Hanus the main lines of the inquiry, and requested him to outline how his branch of the inquiry should be conducted. The plan finally presented by Professor Hanus, including both the Committee's suggestions and his own, was finally approved, and the investigation was begun. An outline of the inquiry along educational lines is presented on page 131 of this report.

Eleven specialists were employed to coöperate with Professor ✓ Hanus. Their names and their subjects will be found on page 126.

A very important part of the Committee's work has been the Committee's inquiry into the condition of the physical plant and the business system and accounts of the Board of Education. Upon these phases of the work the Committee employed the following specialists to make studies of the respective subjects named:

Mr. William H. West, Chartered Accountant—"Organization of the Office of the Secretary, and the Organization and Work of the Bureau of Audit and Accounts, Department of Education."

Mr. Marvyn Scudder, Accountant—"Investigation of Complaints and the Bureau of Supplies of the Board of Education."

Mr. E. W. Stewart, Accountant—(a) "Janitorial Compensation." (b) "Accounting Methods of the Bureau of Supplies."

Mr. W. A. Averill, Investigator of the Bureau of Municipal Research—"Organization and Filing Methods of the Office of the City Superintendent and Board of Associate City Superintendents."

Mr. Charles G. Armstrong, Consulting Engineer—(a) "The Condition and Efficiency of Public School Buildings." (b) "The Degree of Utilization of the School Buildings and Plants." (c) Joint investigation by Mr. Armstrong, Professors Baskerville and Winslow of the College of the City of New York, and Doctor Lucas and Mr. Knox, of the quality of air supplied to classrooms. (d) "Report on New York Public Schools—Delays in Their Location, Design and Construction—Remedies Suggested."

The various experts were left free to conduct their inquiries in their own way after the general plan had been determined upon. The Committee knew nothing of their findings until their reports came in. After reading the reports the Committee requested additional evidence to support allegations of the various reports. The Committee's letters to the various specialists and the replies supplied thereto will be found prefixed to the monographs to which they apply. Professor Elliott and Professor Davis made modifications in their reports; the reasons why other modifications were not made are stated in the correspondence. The report of one of the specialists, Professor E. C. Moore, was rejected for reasons already stated in a special report filed with your Board on October 31, 1912.

It had been the plan of the Committee from the beginning to submit the findings of facts in both branches of its inquiry to the most competent person or persons it could secure for study and analysis and further investigation, with the expectation that it would be possible to draw from the two branches a unified statement of what changes in program, in method and relationship were required for the proper development of the public schools. The Committee knew that it would be impossible for any of the specialists employed to deal with the whole subject until all the reports from the two branches of the inquiry were available.

The Committee was fortunate enough to secure Dr. Frank J. Goodnow, Professor of Administrative Law, at Columbia University, and

Dr. Frederic C. Howe, Director of the People's Institute, to make a study of the organization of the Board of Education and its relation to the city and state governments. Dr. Goodnow is regarded as the leading authority on administrative law, and has served as a member of the commission which drew the present city Charter and the proposed Ivins Charter, and was also a member of President Taft's Economy and Efficiency Commission. Dr. Howe is one of the best-informed students on the subject of municipal organization. He has had considerable educational experience and administrative experience, both here and abroad.

The joint report of Dr. Goodnow and Dr. Howe was practically completed when Dr. Goodnow was appointed constitutional adviser to the Chinese Republic. The Committee was able to release Dr. Goodnow for this important work, for, as he informed the Committee, he had arranged with Dr. Howe to do the proof reading of the detailed report, which will be found in Volume III of this report. This joint report fully establishes the wisdom of the Committee's plan of investigation, its rejection of the report of Professor Moore, and its applying to educational administration those principles of scientific organization which have been proved efficient in other fields of administration.

#### (4) The Cost of the Inquiry.

In order to conduct its work as economically as possible the Committee required all of its employees to file a statement showing what they did each day. This plan has been instrumental in saving the city much money, and should be adopted in every case where the city employs special experts.

#### **Cost of School Inquiry from March 15, 1911, to May 30, 1913, Exclusive of the Cost of Printing the Committee's Final Report.**

##### **Educational Branch:**

Cost of investigation carried on under direction of Prof. Paul H. Hanus from July 1, 1911, to February 1, 1913:

Salaries .....	\$40,879.78
Personal Expenses .....	1,190.40
Office and Other Expenses.....	6,507.88

Total ..... \$48,578.06

Cost of investigation supplementary to the above from July 1, 1912, to May 30, 1913:

Salaries .....	\$4,684.80
Personal .....	96.64
Office and Other Expenses.....	2,099.19

Total ..... \$6,880.63

**Business and Administrative Branch:**

Cost of investigation from March 15, 1911, to May 30, 1913:	
Salaries .....	\$37,438.13
Personal Expenses .....	195.75
Apparatus, Office and Other Expenses.....	2,046.43
<hr/>	
Total .....	\$39,680.31
Grand Total .....	95,139.00

The total paid for salaries in the educational branch of the inquiry was \$45,564.58. The total number of days' work for which this amount was expended was 4,118.5 days, and the average daily salary was \$11.06 per person. The total paid for salaries in the business and administrative branch of the inquiry was \$37,438.13. The number of days worked was 2,448.87 days, and the average daily salary was \$15.28 per person.

The Committee has been able to secure the services of the various experts at comparatively low prices. Professor Elliott served for considerably less than his compensation as expert for the United States Bureau of Education. The thanks of the city are due to Mr. Courtis, who generously contributed his services, and received only slightly more than his expenses, which he kept at the minimum, and to Professor Charles Baskerville and Professor C. E. A. Winslow, of the College of the City of New York, who have, without charge to the city, supervised the long and tedious investigations of ventilation conditions and the quality of air supplied New York public school buildings, and also to Mr. W. A. Averill, whose services were given to the Committee by the Bureau of Municipal Research. Through careful scrutiny of bills and by the use of mechanical devices the cost of tabulating the detailed part-time and promotion reports from the 15,527 classes of the elementary schools, and the Courtis series of eight blanks for each of the 33,000 children examined has been kept at a minimum. The Committee unhesitatingly states that no city investigation of like magnitude has been made previously for any such sum of money.

**(5) Difficulties Encountered.**

The Committee believes it only fair to state that its investigation was carried on under difficulties. No investigation of the kind has ever been made before and there were no precedents to follow. Some time after the investigation began difficulties arose because the right of this Board to make such an investigation was questioned. This delayed the work and required the staff to go on with their work without pay for a period of two months. The inevitable delays, where many departments are involved, also hampered the work. The matter of publication presented difficulties. In order to ascertain the best means of giving publicity to the inquiry reports, a conference was called by the Com-

mittee, to which the managing editors of the various daily newspapers were requested to send representatives, and to which interested public-spirited citizens were invited. This conference recommended the plan of publication followed, which has given wide publicity to the main findings of the various specialists employed by the Committee.

#### **(6) Aid Furnished by Organizations of Citizens.**

The work of the Committee was made easier because of the coöperation of the Board of Education and because of the coöperation and suggestion of individuals and organizations interested in education. The Committee wishes especially to express its indebtedness to the following organizations: The Bureau of Municipal Research, The People's Institute, the Public Education Association, the Russell Sage Foundation, the Charity Organization Society, the Carnegie Foundation for the Advancement of Teaching, and the General Education Board.

#### **(7) National Significance of the Inquiry.**

The preliminary work of the Committee was directed toward the formulation of the general principles which were to guide it in the conduct of its inquiry. In addition to preliminary conferences with the President of the Board of Education and with the representatives of the above organizations, educational authorities and interested persons in this city and in different parts of the country were consulted. The consensus of opinion was that the country at large needed an investigation which would make it possible (1) to appraise the work of secondary schools; (2) to assemble all known efficiency tests in the field of education, and to consider the scientific methods used in the handling of vital statistics, labor statistics and actuarial tables, to the end that comparable methods may be employed in the field of education; (3) to see whether the educational work of the school might not be integrated with the educational work now carried on by the family, the world of business and industry and by governmental institutions; and (4) to decrease the complexity and to increase the responsiveness of educational machinery to individual and social needs.

While the following reports submitted by the specialists to your Committee have been prepared with specific reference to local conditions, nevertheless the foregoing wider purposes have been kept in mind as the underlying aims of the inquiry.

#### **(8) Concluding Statement.**

The various reports of the educational specialists, accountants, statisticians, consulting engineers and other experts engaged by your Committee are presented, as submitted, in this volume and in volumes

two and three. The general table of contents for the three volumes of this report will be found in Volume III. The analytical tables of contents of each report or the subdivisions thereof are prefixed to the reports or subdivisions to which they refer.

Your Committee regrets that it was unable to supply copies of the reports to the teachers of the local schools, and to comply with the requests coming from all the large cities and the various states in the United States, and from England, Germany and Australia, for the several interim reports which have been published during the past year. This was not possible owing to the lack of funds and legal authority to issue a sufficient number of copies to meet the great demand for the reports of the school inquiry.

In conclusion your Committee recommends that the Board of Education and the Board of Estimate and Apportionment coöperate during the next ten or twenty years, if necessary, in carrying out the program outlined in this report. This inquiry has unquestionably demonstrated the imperative need for such concerted action.

Respectfully submitted,

JOHN PURROY MITCHEL,  
*President of the Board of Aldermen.*

WILLIAM A. PRENDERGAST,  
*Comptroller.*

CYRUS C. MILLER,  
*President of the Borough of The Bronx.*

COMMITTEE ON SCHOOL INQUIRY.



**IMPROVEMENTS IN THE PUBLIC SCHOOLS.**



**THE IMPROVEMENTS IN THE PUBLIC SCHOOLS  
OF THE CITY OF NEW YORK  
1898 TO 1911.**

---

STATEMENT FURNISHED BY THE CITY SUPERINTENDENT  
OF SCHOOLS, WILLIAM H. MAXWELL

6th September, 1911.

Prof. PAUL H. HANUS,

*Chairman, Committee on Investigation.*

DEAR SIR: You have asked me to prepare a statement showing what has been accomplished in the way of improvements in the public schools of Greater New York since I became City Superintendent in 1898. The story is a long one and I shall not do more than present the chief outlines very briefly.

In 1898 there were united in The City of New York the former City of New York, comprising what is now the Borough of Manhattan and the Borough of The Bronx; the former City of Brooklyn, which is coincident with Kings county; the county of Queens, which is now the Borough of Queens, and the county of Richmond, which is now the Borough of Richmond. In this vast territory, covering about 320 square miles, there were three city school systems:—The system of the former City of New York, the system of the former City of Brooklyn, and the system of the former City of Long Island City, situated in the Borough of Queens. In addition to these three city school systems, there were thirty-five school districts in the Borough of Queens and twenty-nine school districts in the Borough of Richmond, each under an independent school board or board of trustees. The courses of study, the requirements for entering the teaching profession, the methods of appointing teachers, at that stage of development, were practically as many as there were school boards. The problem to be solved was to unite these different school organizations, which differed radically in almost every respect, into one harmonious school system.

The plan of school organization embodied in the Charter of 1897, which went into effect in 1898, was not conducive to harmonious union. It provided for a borough school board in each borough, which had entire control of school organization, appointment of teachers, curriculum, and text-books, each for its own borough. Each borough school board had its own superintendent of schools and staff of assistant superintendents. There was a central board of education of nineteen members, composed of delegates from each of the borough school boards.

This central board of education had authority chiefly over the physical side of the work:—1, the distribution of the school funds provided by the Charter for the payment of teachers' salaries; 2, the recommendation of sites to the city authorities and the building of schoolhouses; 3, the setting up of minimum qualifications—academic and professional—for teachers' licenses. Its only other educational function was to appoint a city superintendent of schools who had no authority except that of nominating four examiners to the Board of Education—*an idle authority because he was required to nominate from a list prepared by the Municipal Civil Service Commission*—and to report upon the condition of schools without any authority to remedy defects, and to preside and vote on the granting of teachers' licenses in the Board of Examiners. It was necessary to make an eligible list of teachers of all kinds for each borough, because each borough school board was permitted to set up preliminary qualifications, academic and professional, as it chose, provided only that these qualifications were not less than those adopted by the central board of education on the recommendation of the city superintendent.

Each borough school board was authorized to appoint teachers but only on the nomination of the borough board of superintendents, except in Brooklyn, where the Charter permitted the old method to be continued of appointment through a local committee for each school. The characteristics of this method of appointing teachers in Brooklyn you will find described in my First Annual Report, pages 86 to 88.

The plan of school administration described above led to constant confusion and misunderstanding and even litigation between the central authorities and the borough authorities, so that but little progress was made in the schools between 1898 and 1902, when the Charter was modified to assume its present form.

The Charter of 1901, which went into effect in the school system in February, 1902, provides that there shall be one board of education consisting of forty-six members for the entire city. The commission which framed the Charter provided for a board of twenty-three members. The number was increased to forty-six by the Legislature. It also provided that there should be a board of superintendents consisting of the city superintendent and eight associate city superintendents. The four borough superintendents, by virtue of their office, became associate city superintendents, and four assistant superintendents were raised to that dignity. The other assistant superintendents became by virtue of their office, district superintendents. All associate and district superintendents are subject to assignment to duty by the city superintendent. All of the authority vested in the central board of education under the former Charter and in the borough school boards is now vested in the board of education of forty-six members. The appointment of teachers of all ranks is made by the Board of Education in order of standing from eligible lists prepared by the Board of Examiners, on the nomination of

the Board of Superintendents. The Board of Superintendents may consider for nomination the three persons having the highest standings on the appropriate eligible list.

I need not go further into the details of the present administrative system, as you will find a fairly complete sketch of it on pages 11 to 16 of my Twelfth Annual Report. My work during the years that elapsed between 1898 and 1902 consisted largely in organizing the work of the Board of Examiners, raising the standard for admission to the teaching profession, attempting to harmonize the various discordant elements in the system, obtaining legislation, after all attempts to secure favorable action from the local authorities had failed, to fix uniform teachers' salaries throughout the city, and in efforts to secure a change in the system of administration that would do away with the discordant elements then in vogue.

I shall now discuss the developments in our educational work since 1898, under the following heads:

### I. The Licensing of Teachers

In 1895 the State Legislature passed a law which had been defeated by several previous legislatures and once by the Governor, known as Chapter 1031 of the laws of 1895. This measure provides that no teacher shall be licensed or appointed in any city or village of the State having a superintendent of schools, who has not graduated at least from a high school course of three years and a course of professional training of one year of at least thirty-eight weeks, both of which must be approved by the State Superintendent of Public Instruction. It also provides, however, that it should not go into effect until the first of January, 1897, in order to give all municipalities time to prepare for its execution. At the appointed time preparation to meet the provisions of the law was made in Brooklyn, where the high schools, two in number, had three-year courses which were largely attended, and four-year courses which were slightly attended, and by the Training School for Teachers which had a course of one year. In no other borough, however, could this be said to be the case. In the old City of New York practically the only sources for the supply of teachers were the Normal College and the City College. The Normal College had a course of five years above a seven-year course in the elementary schools, upon the completion of which a student received the degree of Bachelor of Arts. It had also a four-year course, much more largely attended, which included three years of academic work and one year of professional work, but which did not end in a degree. The State Superintendent of Public Instruction, after investigation, declined to approve these courses and it was necessary to secure a special dispensation from him in order to supply the schools with teachers, even though the fact was recognized that they were not adequately

prepared. My aim was to make the minimum course of preparation four years of academic work and two years of professional training. This aim has been realized. The first step was to establish in the Borough of Manhattan a training school for teachers with a course of two years. At first this institution was very slimly attended, because young women could enter the Normal College direct from the elementary schools and come out as full-fledged teachers in four years, including both professional and academic work. Gradually, however, the training school gained ground, particularly after the competitive system of appointment was introduced. The result was that finally the course in the Brooklyn Training School for Teachers was increased from one year to two years and that the Normal College established a three years' course, academic and professional, above a four years' high school course,<sup>1</sup> and that the College of the City of New York established a four years' college course above a three years' high school course. The only exception now to the rule requiring at least a four years' academic course and a two years' professional course is in the case of teachers who have had five years of experience elsewhere and who pass an academic as well as a professional examination.

## II. Appointment of Teachers

One of the chief troubles under the first Charter, 1898 to 1902, was that the borough school board of Brooklyn appointed teachers on the nomination of a local committee for each school, whereas in the other boroughs nomination by the borough board of superintendents was required. Another difficulty was that in any borough a teacher might be nominated at the will of the nominating authority from any part of the list. The only exception to this was a local regulation in the boroughs of Manhattan and The Bronx, which required the appointment of

<sup>1</sup>September 18, 1911.

DEAR SIR: I desire to make a slight modification in the report I recently sent to you with regard to things accomplished in the New York school system since 1898.

On page 8 I make the following statement:

"The Normal College established a three years' course, academic and professional, above a four years' high school course."

As far as it goes this statement is correct. I should add, however, that more recently the college course was in effect raised to four years, as the following resolution adopted by the trustees on March 20, 1908, shows:

"Resolved, That the Normal College course is the standard college course of sixty (60) credits, commonly known as the four years' college course.

Under favorable circumstances, students may complete it in a shorter time, but not in less than three (3) years.

Students entering without a complete preparation or failing in any subject at the end of the first term cannot complete the course in three years except by special permission of the Faculty."

Truly yours,

WILLIAM H. MAXWELL,  
City Superintendent of Schools.

Professor PAUL H. HANUS,  
51 Chambers Street, New York City.

teachers in order of standing from the eligible list prepared by the Board of Examiners. Under the Charter of 1901 the practice was made uniform in all boroughs, namely, nomination in order of standing on eligible lists by the Board of Superintendents and appointment after such nomination by the Board of Education.

The one great difficulty in carrying out this plan has been nomination and appointment of teachers to the higher grades in the elementary schools in the borough of Brooklyn, because of certain old licenses which exist in Brooklyn and which the courts have declared to be still valid. This difficulty is not yet solved.

### III. Salaries of Teachers

Under the borough system of school administration the disparity in teachers' salaries that existed in the various school organizations prior to consolidation, continued. A bill passed by the Legislature in 1899 to remedy this condition of affairs, known as the Ahern law, which simply prescribed that after ten years of service a teacher should not receive less than a certain sum, altogether failed of the effect it was intended to have. The appropriations made by the local authorities for teachers' salaries were so meager that it was found necessary in some cases to reduce the very small salaries paid to teachers of less than ten years' experience in order to give to those who had ten years or more experience the salaries prescribed by law. To meet this condition of affairs, which was demoralizing to the entire system, I originated the plan afterwards embodied in what is known as the Davis law, which required that the General School Fund—that from which teachers' salaries are paid, should not be less than the amount derived from a tax of *four* mills on every dollar of assessed valuation of the real and personal property of the city. Many of the schedules embodied in the Davis law and some of its provisions I did not approve, but it provided a system so much better than what had previously prevailed that I earnestly advocated its adoption and indeed was largely instrumental in inducing Governor Roosevelt to sign it. That law went into effect on 3rd May, 1900. Since that time has arisen the demand which is generally known by the phrase "equal pay for equal work," and which has for its object the raising of the salaries of women teachers to equal the salaries paid to men teachers. My last word upon this subject you will find in my Twelfth Annual Report, pages 216-220. I discussed the equal pay agitation in the Ninth Annual Report, pages 113-132.

### IV. Assignment of District Superintendents

One of the first things it was necessary to do in 1902 was to assign the associate and district superintendents to duty. The Charter provides that one district superintendent shall be assigned to the super-

vision of schools in every two of the forty-six school districts. I found twenty-six district superintendents. Twenty-three were assigned to the districts. One was assigned to the supervision of evening schools; another to the supervision of vacation schools, playgrounds and recreation centers; and the third to assist in the supervision of high schools. This method of assignment still continues with regard to district superintendents. In my judgment the supervisory force is not at present sufficiently large. It has not been increased since 1902, though the school register has increased from 496,999 in September, 1902, to about 710,000 in September, 1911, or 60 per cent. Furthermore, the work of the district superintendents has been greatly increased by placing upon them the supervision of the attendance officers and the conduct of all trials under the compulsory education law, either preliminary or final, when parents are summoned for the absence or illegal employment or for the incorrigibility of their children. I intend to recommend to the Board of Education at an early date and have recommended to the Legislative Committee in charge of the proposed Charter for Greater New York that a new office be created, namely, that of *primary supervisor*. I believe that we greatly need in this city some first-class women who, under that title, would take general charge of all the work in the first two or three years of school life.

The general plan of supervision is that the district superintendent shall attend to all matters requiring supervision in his two districts, shall direct the attendance officers assigned to those districts and shall, subject always to the advice of the directors of special branches, have as his aids in supervision, special teachers of sewing, physical training, drawing, and music.

Two difficulties have been encountered in making the work of the district superintendents effective. The first is that in the old City of New York the function of the visiting superintendents was chiefly to examine classes, mark teachers, and report results. It has been a difficult task to induce many of the older superintendents to undertake the work of teaching teachers and principals, and teachers did not at first take kindly to that kind of supervision. In the second place, in the boroughs of Queens and Richmond there had been practically no supervision worth the name. In many places, particularly in Queens, principals and teachers have not even yet got used to instruction of this kind.

I believe further that the time has arrived when the district superintendents should be relieved of the time-consuming work of enforcing the compulsory education law. Until recently I did not see my way clear to recommend any change in this plan. A year and a half ago, however, the Permanent Census Board was created under Chapter 249 of the laws of 1908. I am of the opinion that there is a great deal of duplication of work by the Permanent Census Board and by the Compulsory Education Bureau. The Compulsory Education Bureau



has not been able to overtake all of the work in the way of finding absentees reported by the census enumerators during the past school year. Over 5,000 cases have not yet been adjusted. I have recommended to Mayor Gaynor that a bill be introduced in the Legislature not only amending the permanent census law but also transferring to the Permanent Census Board the enforcement of the compulsory education law, but leaving the care of truant schools under the direction of the education authorities.

### V. Assignment of Associate Superintendents

The assignment to duty of the eight associate superintendents is left by the Charter in the hands of the City Superintendent, subject to such rules and regulations as the Board of Education may see fit to enact. The Board of Education has not enacted any such rules and regulations. The City Superintendent, however, in 1902 assigned one associate superintendent to the supervision of high schools. He then divided the city into seven divisions, each division comprising four or more districts. Over each division he placed an associate superintendent whose duty it is to confer with the district superintendents in the division, to unify the work as far as possible and to represent the needs of the division, particularly as to consolidation of classes, creation of new classes, the organization of schools, the procuring of sites and the erection of new buildings, and the assignment of teachers to work, in the Board of Superintendents. I devised this plan in 1902 because of the heterogeneous character of the school organizations in the different sections of Greater New York. I believe it has worked well and has measurably accomplished its object. That object, however, having been at least partially accomplished, I am now meditating a change in the assignment of the associate superintendents. My thought is, instead of assigning the associate superintendents by geographical divisions, to assign each of them to one kind of work throughout the greater city. In addition to the work of supervision connected with his own division, each associate superintendent has other duties to perform, chiefly in connection with committee work of the Board of Superintendents. The committees of the Board of Superintendents as they are at present organized, you will find on page 19 of my Twelfth Annual Report. All matters having to do with the Board of Superintendents, except when occasionally I lay some important subject before that body for discussion, come through these committees.

One of the first duties of the Board of Superintendents in 1902 was to carry out the provisions of Section 1089 of the Charter which reads in part as follows:

"The board of education on the recommendation of the board of superintendents shall designate, subject to the requirements of the state school laws in force when this act takes effect or that

may thereafter be enacted, the kinds or grades of licenses to teach which may or shall be used in The City of New York together with the academic and professional qualifications required for each kind or grade of license. The board of education, on the recommendation of the board of superintendents, shall also designate, subject to the like limitations, the academical and professional qualifications required for service of principals, branch principals, supervisors, heads of departments, assistants, and all other members of the teaching staff."

The qualifications for licenses for the various positions you will find on pages 130 to 164 of the Manual of the Board of Education. The original rules adopted on the recommendation of the Board of Superintendents are now substantially as they were in 1902. Many new licenses, however, have been created as new activities have been added to the scheme of work.

## VI. Organization of High Schools.

High schools were first established in the old City of New York (if the City College, and the Normal College, which are not under the direct supervision of the Board of Education are left out of consideration) in 1897. As far as the curriculum of these schools is concerned, it was practically only a three-year course as it was designed to make them at least at first purely feeders to the Normal College and the City College. In Brooklyn there were three high schools with academic courses which were quite different in many respects. The Girls' High School and the Boys' High School had just been formed from the original central high school, formerly known as a Central Grammar School. The other academic high school was held in a building erected over one hundred years before, known as Erasmus Hall, which had been made over to the city by the Dutch Church of Flatbush. The Manual Training High School had been established in a rented building poorly adapted to school work of any kind. In the borough of Richmond there were three small high school departments doing very imperfect academic work. In the borough of Queens there was one small high school with a four-year course, and seven or eight high school departments in elementary schools with courses ranging from two years to four years.

The first work undertaken by the Board of Superintendents with the assistance of the principals and teachers of the high schools was to recommend to the Board of Education a uniform academic course of four years for all of these high schools. The academic or general course followed to-day is practically that adopted in 1902. It was found, however, even when this uniform course was put into effect, that there was great disparity in the results obtained in the various

schools, partly due to the traditions of the schools themselves, partly due to different standards adopted by principals and teachers, and partly due to divergent attainments of pupils entering from the elementary schools in various parts of the city. In order to standardize the work, the Board of Superintendents, in 1904, on my recommendation, instituted a uniform examination for graduation from high schools. In brief, the method of conducting this examination was as follows: I requested the principals and teachers of each high school to submit question papers in each subject covering the work done in each school. From these questions I had a question paper prepared in each subject by some one supposed to be an expert in that subject. The high school students wrote on these papers at the same hour and day throughout all the high schools. All of the answer papers were transmitted to one place where they were marked by committees of teachers acting, each committee under the direction of the chairman, and all committees under the direction of the superintendent specially assigned to that work. I am of opinion that this examination did conspicuously good service in the high schools. About five years ago, however, we felt constrained to relinquish this examination and we substituted for it an examination given by the State Examinations Board in which New York City is largely represented, under the direction of the State Commissioner of Education. This examination is uniform throughout the high schools of the State. The reason we substituted the State examination for our own was that the Regents of the University of the State of New York passed an ordinance declaring that no high school which did not take the examinations of the State Examinations Board should participate in the State high school fund. As we could not afford to lose this money, it was decided to take the State examinations. There has been some complaint from the principals and teachers of the high schools that the character of the State Examinations Board's examination papers, particularly in mathematics, has lowered the standard of teaching in that and some other subjects in our schools and that our modern language teaching has been seriously injured. Representations made, however, to the State Department of Education, regarding the character of the papers in modern languages, have led to a change in the method of preparing these papers that we trust will produce better results.

The next step in high school development was to secure suitable buildings for our high schools. The high school buildings that have been erected since 1898, and chiefly since 1902, are, I think, a credit to our city and country. I particularly call your attention to the Morris High School in The Bronx; the De Witt Clinton High School and the Stuyvesant High School in Manhattan; the Eastern District High School, Erasmus Hall High School, and the Manual Training High School in Brooklyn; the Bryant High School in Queens; and the Curtis High School in Richmond.

The third step in the development of high schools was the diversification of their work. In 1898 the only divergence from the old academic type of high school was the Manual Training High School in Brooklyn, which was then only very imperfectly developed, and some sporadic courses in bookkeeping and stenography and typewriting in the other Brooklyn schools. In carrying out this work the Manual Training High School of Brooklyn has been developed to its present condition; the Stuyvesant High School, a manual training high school for boys, was established in Manhattan; the Bryant High School was organized in Queens; and the technical courses for girls (commercial work, stenography and typewriting, dressmaking and domestic science, library economy, and design) were established in the Washington Irving High School, Manhattan.

The most conspicuously successful effort at diversification in high school work was made, however, in the two commercial high schools—the High School of Commerce in Manhattan, and the Commercial High School in Brooklyn. In these schools every subject is taught, whether it be English, foreign languages, mathematics or science, as well as the more purely commercial subjects, such as bookkeeping, office practice, commercial law, political economy, and stenography and typewriting, from the commercial point of view. In other words, every subject is so taught as to prepare the student to enter successfully upon a commercial career.

We need more commercial high schools and more manual training high schools.

One of the questions which is leading to considerable discussion at present is whether each high school, when organized, shall be a high school adapted to some one phase of high school work—the academic phase, the manual training phase, or the commercial phase; or whether each new high school shall contain all three departments. On the ground of economy, as well as of efficiency, I am strongly in favor of the specialized high school in all the thickly settled parts of the city.

The number of high school students increased from 9,432 in September, 1898, to about 42,000 in September, 1911.

## VII. Admission of Students to High School

Prior to 1902 pupils had graduated from the elementary schools in the borough of Brooklyn and been admitted to the high schools on a uniform examination conducted by the superintendent of schools. In all of the other boroughs pupils were admitted upon the certificate of the principal of the elementary school without any examination. It was deemed unwise to impose upon the elementary schools of the other boroughs such an examination as had formerly been given in the city of Brooklyn. At the same time it was found that many pupils were

sent to the high schools in all the other boroughs who were entirely unfitted for high school work. In order to standardize the work of the elementary schools and in order to prevent, as far as possible, the sending of unfit pupils to the high schools, it was decided to ask each elementary school principal to give a certificate to each elementary school graduate, stating his proficiency in each of the subjects of the elementary curriculum. A copy of this certificate is attached. It has measurably achieved the object for which it was designed.

### VIII. Organization and Curriculum of Elementary Schools

One of the most difficult problems presented to the Board of Superintendents was the unification of the work in elementary schools. The elementary schools of the old City of New York (boroughs of Manhattan and The Bronx) had a curriculum of seven years; Brooklyn had a curriculum of seven and one-half years; Queens and Richmond had a curriculum of eight years. It was decided after much discussion to make a uniform curriculum of eight years. The extension of the elementary school course from seven to eight years in the boroughs of Manhattan and The Bronx was attended with great difficulty but was finally achieved.

The history of the course of study in elementary schools has been already submitted to you at your request.

In 1904 at the Congress of Arts and Sciences held at St. Louis, in connection with the World's Fair, I presented a paper in which I urged that sooner or later the elementary schools of the country be organized with a six-year course of study and the high schools with a six-year course of study, instead of the present organization of an eight-year course of study for elementary schools and a four-year course for high schools. As a beginning I urged that wherever possible the pupils of the last two years of the elementary course should be consolidated in separate buildings and taught by the departmental system. As the direct result of this advocacy, three such schools have been organized in this city—P. S. 62 and P. S. 24, Manhattan, and P. S. 58, Brooklyn. The organization of these three schools represents, however, only a small part of this kind of work. In many of the crowded parts of the city the upper grades of two or three schools have been consolidated in one building, though part of that building is still devoted to the work of the first six years.

In 1902 it was found that the majority of the large buildings in the borough of Manhattan and a few buildings in the borough of The Bronx were occupied by three separate school organizations with three principals, each having independent jurisdiction—a boy's grammar school, a girls' grammar school, and a primary school. Since that time the policy has steadily been carried out of consolidating all sep-

arate school organizations in one building into one school under one head. In case the school is very large the principal is given one, two, or three supervisory assistants, in accordance with the number of classes. This work, which makes, I believe, both for economy and for efficiency, has not yet been completed, but much has been done. In no building are there more than two elementary school organizations at present, and I trust that within the next two or three years, except in a very few very large buildings, there will be no building that will contain more than one school.

In 1902 it was found that in nearly every school one of the most highly paid teachers had been taken from class work and set to perform purely clerical duties. These clerical assistants, as they were called, have now, with a very few exceptions, been either retired upon pension or reassigned to class duty. The exceptions referred to are a very few cases where the teachers are incapacitated for physical reasons from doing classroom work and have not yet attained the years of service required for retirement.

### **IX. Instrumentalities for Improving the Work of Teachers in the Service**

Two reasons have made it specially necessary to use every effort to improve the work of teachers in the service:

(a) The presence of many very old teachers who had grown up under a system or systems in which purely formal work, chiefly verbal memorizing, was almost the only result expected.

(b) The pouring in to the system of from 1,000 to 1,500 new teachers every year, three-quarters of whom had no experience in teaching of much account before their appointment, and who need constant instruction, guidance, and encouragement. The means employed for improving the work of teachers in the service may be summarized under the following heads:

1. Deliberations in the Board of Superintendents, the results of which are carried out by the district superintendents, after conference with and instruction from their respective division superintendents.

2. General superintendents' conferences participated in by associate superintendents, district superintendents, examiners, principals of training schools, and when occasion requires, by directors of special branches. These conferences have been presided over by the city superintendent. They have been held most frequently when any new departure was made in the course of study.

3. Conferences of the principals of a district, conducted by the district superintendent.

4. General conferences of all principals at which the city superintendent has presided and before which papers have been presented and discussed by principals.

5. At least twice a year the city superintendent addresses all the superintendents and principals in the city, outlining policies, discussing problems, and suggesting improvements.

6. The supervisory work performed by the district superintendents. It is the duty of each district superintendent to report on the work of the principal of a school and his assistants, and the character of the school as a whole. It is also his duty to visit each classroom, advise with the principal and teachers and report results. District superintendents have been requested to look at the following aspects of a teacher's work:

- (a) Care for neatness of room and material.
- (b) Care for hygiene and sanitation.
- (c) Care for decoration.
- (d) Care for person (i. e., dress, carriage, and voice).
- (e) Care for records.
- (f) Ability as a teacher, determined by her own knowledge, by her method and its fruits, and by the reciprocal attitude of teacher and pupils.

The district superintendent is authorized to use his own methods of finding out what he desires to discover, but as a rule all district superintendents employ both methods—inspection and examination—oral and written.

7. When faults are discovered by a district superintendent he

(1) Communicates directly with the teacher either (a) at the time, not in the presence of the class, but, if possible, in the presence of the principal; (b) by letter; (c) at a subsequent conference with the principal, at his own office.

(2) Tells indirectly, e. g., by doing the concrete thing, while in the classroom; by referring to some published book, article, circular or by-law, or by referring the matter to the principal for treatment.

(3) Requests teacher to visit some school in which she will see the particular thing done in the approved way.

(4) By suggesting to the principal the propriety of so arranging his school that a mediocre teacher may be placed near a strong teacher of the same grade, whose example she may cultivate and from whose work she may receive inspiration.

8. By inviting and encouraging principals and teachers to originate and institute better ways of doing things, and when a better way is found, by spreading information regarding it to other schools. For instance: The experiment made in teaching penmanship by Miss Rec-  
tor, principal of P. S. 4, Manhattan, is the direct cause of the general introduction of the free-arm movement in penmanship which is revolutionizing penmanship in the schools.

9. The strict investigations made under the direction of the City Superintendent with regard to the work of young teachers during the three years of probationary service have had a potent effect in rendering them more efficient and in causing them to feel more responsible for results.

10. The authority lodged in the Board of Superintendents to disapprove a teacher's service in the elementary schools at the seventh year and the twelfth year and in high schools at the fourth year and the ninth year, the effect of which disapproval is to prevent a teacher's advancing in salary until approval is obtained, has caused all teachers or nearly all to work more energetically and to use many of the available means for increasing their knowledge and improving their technical equipment.

11. The competitive examinations for licenses required for all higher positions have led thousands of teachers to take advantage of the summer afternoon and evening classes established by the local universities and by Harvard, Cornell, Chicago, and other institutions, all of which is reflected in improved work in the school.

12. Once a year district superintendents, and twice a year principals, record their estimates of teachers' work. These estimates are kept on file in my office, are frequently referred to, and have an important influence in maintaining the standard of teaching.

## **X. Guidance of Elementary School Graduates**

One of the matters that have engrossed a great deal of time and attention in the conferences referred to in the last section is the guidance of elementary school graduates in the choice of the high school they shall select to attend. Principals and teachers have been urged to study the special aptitudes of the graduates and to advise the parents of each as to whether the child shall take the general academic course, the commercial course, or the manual training course. Since the inauguration of trade schools a fourth alternative is presented.

## **XI. The Elimination of Large Classes**

Prior to 1902 it was the custom in all the crowded parts of the city to fill up each classroom, particularly in the lower grades, and when the classroom was full, to refuse admission to further applicants, to place them on a waiting list, and to send for them when a vacancy occurred. In the more congested parts of the city this practice was carried still further by continuing to admit to a class until the teacher had enough pupils to fill all the seats during the forenoon session with one set of pupils, and all the seats at the afternoon session with another



set of pupils. I have, myself, seen a class of this description with 175 pupils. Classes of 120 pupils under one teacher were not uncommon, while there were hundreds of classes with over 100 pupils. The results of this system were, as you would naturally expect, (a) that many children who were refused admission never attended at all; (b) that many parents refused to send their children to a public school crowded in this way; (c) that it was impossible for one teacher to teach properly so many children; (d) that those at the afternoon session were particularly unfortunate because they received, a recess being given in the middle of the afternoon, not more than one and one-half hours' instruction each day; and (e) that the system was a potent cause of retardation because the pupils of the afternoon session were rarely if ever promoted to the next higher grade, but to the next term's morning class of the same grade. Early in 1902 a new policy was inaugurated which has since continued. This policy provides that no child of school age shall be refused admission; that all children of school age who offer themselves shall be received; that if there is not room for them in a whole day class they shall be transferred by the district superintendent to a neighboring school, and that if this is not possible they shall be organized in what has come to be known as part-time classes. Instead of permitting, as formerly, one teacher to teach an excessive number of pupils, the plan was adopted of appointing one teacher for the forenoon session who rendered service in the forenoon for three and one-half hours and assisted the teacher of the afternoon session for one and one-half hours. Another teacher is appointed for three and one-half hours in the afternoon and assists the morning teacher for one and one-half hours. This plan, though not ideal, you will see is a very great advance upon the old system under which one teacher taught two classes of pupils, one in the morning and the other in the afternoon. In recent years several attempts have been made on the score of economy to return to the system in vogue prior to 1902. Fortunately for the schools all these attempts have so far been defeated. There have been variations of the plan of part-time that have been invented by principals. As a general rule, however, the outline of the plan given above is that which still obtains. It is the object of the Board of Superintendents to have no class with a register higher than 49 and not higher than 40 in grades 7A-8B. After that object shall have been attained we hope to have money enough and school buildings enough to have no class exceed the seating capacity of any room, as determined by the following rule:

"At least fifteen square feet of floor space and two hundred cubic feet of air space for each pupil to be accommodated in each study or recitation room therein."

## XII. Retardation of Pupils in Elementary Schools

It was in 1904 that I had the honor of calling the attention of the public to the great number of over-age children in the elementary schools of New York City. In an article published recently by the American Statistical Association Mr. Rowland P. Faulkner gives the following account of the inception of the work to reduce the number of over-age children in the grades, which has since assumed almost world-wide proportions:

"The development of an interest in retardation proceeded from two points widely separated geographically—New York City and Porto Rico—but through the return to the United States of Porto Rican officials, the two movements have been merged into one. In his report for 1904 the Superintendent of Schools in New York, Dr. W. H. Maxwell, developed the idea of the over-age or retarded pupil, and showed by his figures that some 39 per cent. of the pupils in the public schools were retarded. At the time his work stood practically alone. There was nothing to compare with it. Whether the percentage was high or low could not be known by a comparison with other places. It was, however, recognized by Dr. Maxwell that retardation was not a phenomenon peculiar to New York schools, and he was interested in ascertaining the factors which produce retardation more than in measuring its amount. In the discussion which followed the publication of these facts, attention was frequently called to the defective physical condition of school children as determined by the medical inspection of schools. The conclusion was frequently drawn that physical defect was the main cause of backwardness, and Dr. Maxwell's studies exerted a stimulating influence upon the ever-spreading movement for medical inspection.

"In its report for 1904, the Bureau of Education applies the concept of a normal age to other figures giving the age and grade distribution of pupils found in the reports of other cities. The whole number of cities in the list, including New York City itself, is only nine, and this represents presumably the information available at that time."

As soon as the facts of retardation became known, we set to work to devise ways and means of securing the more rapid advancement of over-age children. We felt that all the great improvements, both in curriculum and in school administration, had up to that time been made chiefly for the benefit of the bright and normal pupils and that but little had been done for the benefit of those who, for any reason, were dropping by the way. The first means suggested and adopted was to establish special classes for over-age children, known as Grades C, D, and E.

Classes of Grade C are intended for foreign children who cannot speak or read the English language and who need special instruction along those lines before they are able to take advantage of the regular grade work. After a few months in these classes the pupils, when they are able to speak and write ordinary English words, are transferred to the grades which they are entitled to enter by reason of their other attainments.

Classes of Grade D are intended for over-age children who have either passed or are approaching the age of fourteen years—the age at which a child may be granted an employment certificate, provided he has a certain school record and has attained certain proficiency in his studies. The children for whom these classes are intended are children who not only have no hope of ever graduating from the elementary schools, but who, at the age of fourteen, are deplorably behind in their studies, and who will certainly go to work as soon as the law allows.

Classes of Grade E are rapid advancement classes for over-age children who wish to complete the elementary school course and for whom special coaching is needed to enable them to enter the 7A grade.

Principals have been authorized to modify the course of study for pupils in the D and E grades, as they find it to be necessary.

A special syllabus of work for classes of Grade C—classes to teach English to foreigners—has been issued by the Board of Superintendents.

Another method of aiding over-age children is the establishment of continuation classes in the vacation schools. These classes are intended for children who have failed to receive promotion in June and who desire to work up in one or two subjects during the summer. We had 164 such classes, largely attended, this summer. The pupils are required to pass at the close of the term an examination in the subjects in which they were reported as deficient. If they have attended regularly, been industrious, and passed the examination, they are given a certificate to that effect. This certificate entitles them to a trial in the next higher grade to that in which they were in June.

Another method of aiding over-age children, though it also applies to others, is the establishment of evening study classes in the winter recreation centers. These classes are intended particularly for those children who are retarded because they have no proper place in which to study their lessons at home. A teacher is appointed for each fifty or sixty pupils who keeps order and gives judicious aid when occasion may require.

These agencies have all, I think, rendered materially good service. Certain it is that the number of over-age children is gradually decreasing in the grades. I am disposed to think, however, that the cure for the over-age condition, as far as it may be cured, lies more in anticipating failure of promotion by taking measures to prevent it than in trying to bring up pupils to a certain standard after they have failed.

It is along these lines that I am now urging principals and teachers to make their best efforts.

I do not anticipate that the time will ever come when there will not be many children who fail to receive promotion at the end of a term or the close of the school year. I do not anticipate that the time will ever come when there will not be a considerable percentage of pupils in the grades who are above what has been assumed to be the normal age for each grade, particularly in this city where we have so large an influx of foreigners and of people from rural districts.

### **XIII. Departmental System of Teaching**

Soon after the re-organization of the schools in 1902, I urged upon principals to re-organize the work in the classes of the last two years of the elementary course for a departmental system of teaching. This suggestion has been followed in about three-fifths of the grammar schools of the city. One teacher teaches mathematics through four grades or perhaps two grades, instead of teaching all subjects in one grade, etc. When a change of this kind is made in a school it seems at first to injure the work; after teachers become accustomed to it, however, the work steadily improves.

To a limited extent departmental teaching is also used in some schools in the first six grades, particularly in the way of allowing the teacher who has a special gift in teaching singing or drawing, to teach one of these subjects in other classes than her own, while the teachers of those other classes in turn take charge of her class.

### **XIV. Manual Training**

Prior to 1902 work-shops and cooking rooms had been established in a few of the schools in Manhattan and The Bronx, but not in any of the other boroughs; sewing was taught in Manhattan, The Bronx, and Brooklyn, but not in Queens and Richmond. Since that time shops and cooking rooms have been provided in all new elementary school buildings and, as far as possible, in old buildings. It has been exceedingly difficult, however, to obtain money for this purpose from the Board of Estimate and Apportionment—that is, for the establishment of shops and kitchens in old buildings. A few years ago it was necessary to conduct a very strenuous fight to retain these activities in the schools on account of opposition in the Board of Estimate and Apportionment, particularly when Mr. E. M. Grout was Comptroller.

### **XV. Student Self-government**

The institution of student self-government has never been required in any school. Under persistent urging, however, some form of student self-government is now found in *all* of the high schools, while well

matured plans—generally modifications of the “school city” idea—are in use in several elementary schools. I would particularly call your attention to the plan in use in P. S. 109, Brooklyn.

### **XVI. Physical Examination of School Children**

For the first time, in 1902, when Dr. Lederle was Commissioner of Health, an earnest effort was made to examine school children, to discover their physical defects and to secure proper “follow up” measures, either by family physicians, dispensaries and hospitals, or by school nurses. While I think the Department of Health has been in earnest, and never more so than at present, to do this work well, I cannot regard it as satisfactorily done. I treated this subject somewhat fully in my Ninth Annual Report. The criticisms on this work made then I regard as still holding good.

### **XVII. Physical Training**

The work in physical training in our schools became greatly improved while Dr. Luther Halsey Gulick was Director of this branch. The corrective exercises were rendered less formal and more diversified and made more interesting. Athletic games for both boys and girls were introduced and folk dancing for girls was made a feature of our work. The chief aim of our physical training work at present is to insure habits of living which lead to vigorous health.

### **XVIII. Public School Athletics**

It was during Dr. Gulick's incumbency as Director of Physical Training that the Public Schools Athletic League, of which General George W. Wingate is the president, was organized. The aim of this organization, which is composed partly of school officers and partly of citizens outside the schools, is to encourage athletics among public school children. The design is to secure the participation of every boy in some kind of athletics. This result has been very largely accomplished by the awarding of athletic buttons for certain achievements at certain given ages and by inter-class and inter-school meets. The authorities of the National Guard have been extremely kind in placing the regimental armories at our disposal for these purposes. The work of the Public Schools Athletic League has also led to the acquisition by the Board of Education of four well equipped athletic fields.

Out of the work accomplished for boys has grown the work for girls, chiefly in folk dancing, controlled by the Girls' Branch of the Public Schools Athletic League. Folk dancing has now become the favorite physical exercise of the girls of this city. It is found in every school-house, in every public school playground, and in every girls' recreation center.

### **XIX. The School History of Each Pupil**

About three years ago the Board of Superintendents prescribed a form of card catalogue for use in every school, by which a school history of every pupil is kept. The work of completing these cards in all the schools is not yet finished.

### **XX. Growth of the System**

I presume it is not necessary for me to dwell at this time on the rapid growth of the public schools of this city. I would call your attention, however, to the chapter on this subject in my Twelfth Annual Report, pages 207-216, in which it is shown that during the decade 1900-1910 the population of the city increased 39 per cent., while the register in the schools increased 58 per cent.

### **XXI. Lectures to the People**

The old City of New York was the first municipality in this country to establish lectures for the people in public school buildings. It was, if I remember aright, in 1900 that this movement began in Brooklyn. Since the re-organization in 1902 this work, under the supervision of Dr. Henry M. Leipziger, has been extended to all parts of the city.

### **XXII. Classes for Mental Defectives**

Classes for mental defectives are designated Ungraded Classes. This is a somewhat unmeaning designation. It developed, however, from the fact that these classes have grown out of a few classes originally established to provide instruction for all sorts and conditions of pupils, the mentally and physically defective and the incorrigible, who did not prove amenable to the instruction and discipline of the regular classroom. In 1902 an investigation of the work done in these classes showed that because of their mixed character, results were not satisfactory. It was decided to confine these classes to children who are atypical or mentally defective, without being utterly imbecile. An inspector of these classes, Miss Elizabeth E. Farrell, was appointed and a physician assigned from our corps of physical training teachers, to examine all pupils suggested by the principals and teachers as mental defectives. No pupil is admitted to any of these classes who is not certified both by the medical examiner and by the Inspector of Ungraded Classes as a mental defective. I am convinced that these classes, of which there are now 111—not nearly enough—are serving a good purpose.

### **XXIII. Classes for Crippled Children**

A few years ago the Board of Education was invited to take over the instruction of a number of crippled children collected in a private house on Montgomery street. A benevolent society undertook to provide medical attendance, meals, baths, etc. Out of this school has grown the finely equipped institution on Henry street, the same division of responsibility being continued. Since that time this work has grown until we have now 28 classes for crippled children, with a register of 498.

### **XXIV. School for the Deaf**

In September, 1908, a day school for teaching the deaf and dumb was established. The pupils are taught to read the lips and to articulate themselves. They are then given as much of the regular grade work of the elementary schools as they can master and are beginning to receive some trade instruction.

### **XXV. Classes for Tubercular Children**

When, by more rigid examination of school children for physical defects, the health authorities began to exclude from the schools children suffering from open tuberculosis, classes for such children were established in the open air, on old ferry boats moored in the East River in the vicinity of hospitals and on the roof of the Vanderbilt Clinic. We have now seven such classes. The first open air class in America was established for tubercular children in 1904 at Coney Island—the same year in which open air classes were first established in Charlottenburg, Prussia. This class still continues.

### **XXVI. Classes for Anemic Children**

The success attending the open air treatment of tubercular children led to the establishment of open air classes for anemic children and those threatened with, or particularly liable to, tuberculosis. The first of these classes was established about one and one-half years ago in P. S. 21, on Mott street, Manhattan. We have now five such classes.

### **XXVII. Truant Schools**

Provision for the confinement and training of so-called incorrigible truants was and still is inadequate. The building which I found used for this purpose in the borough of Manhattan is in a densely settled neighborhood, without yard space, farm, or garden. The Truant School

of Brooklyn is an old and poor building, though it is situated on a tract of land containing about twelve acres. It was and still is necessary to send many of our truants to outside institutions, particularly the Catholic Protectory. To remedy this state of affairs the Board of Education purchased a tract of land containing about one hundred acres in the borough of Queens. The buildings so far erected are admirable for their purpose. The land has been, for the most part, brought to a high state of cultivation; the institution is conducted on the cottage plan, and trades are taught. We require, however, a large sum of money to complete the buildings, so that this institution will be able to take care adequately of all the truants committed either by the police magistrates or by the educational authorities. When this object is attained it will be possible to dispense with the inadequate and poorly equipped buildings of the Manhattan and the Brooklyn Truant Schools.

### XXVIII. Fire Drills

The danger of fire breaking out in one of our very large buildings, emphasized by the tradition of terrible loss of life occasioned by school fires in bygone years, has always been present in the minds of those responsible for the administration of our city schools. The Collingwood disaster brought this subject forcibly before the public mind. As a consequence every effort has been made to render our school buildings as safe as possible, while fire drills are regularly conducted at least twice every month. In case it is found that it requires more than three minutes to empty any school building of all its inmates in an orderly manner, inquiry is made as to the cause and an attempt to rectify it ensues. Though we have had several fires, two or three of them very serious, during the past ten years, no life has been lost and not a child has been even injured. This gratifying result is very largely due to the thoroughness of the fire drills and to the heroic firmness of principals and teachers when danger has threatened.

### XXIX. Industrial Training

Some six or seven years ago the Board of Education began to establish evening industrial schools. These schools are of two kinds—evening trade high schools and evening industrial schools. The evening trade high schools are three in number—the Stuyvesant High School in Manhattan; the Manual Training High School in Brooklyn; and the Bryant High School in Queens. These schools are intended for instruction in trades for young men and young women who are engaged in manual work during the day. A considerable portion of the students, however, are persons who are not yet engaged in the trades but who desire to enter. The evening industrial schools, of which there are



three, are attended chiefly by colored people who desire to acquire some means of earning a living.

Two years ago the Board of Education established a vocational school for boys in P. S. 100, 138th street and Fifth avenue, Manhattan.

A year ago the Board of Education took over the work of the Manhattan Trade School for Girls.

For a description of the Vocational School for Boys I beg leave to refer you to pages 182-186 of my Twelfth Annual Report.

The Manhattan Trade School for Girls has grown steadily in numbers since it came under the jurisdiction of the Board of Education a year ago.

Opportunity is given in these two schools to boys and girls who have reached the age of fourteen, even though they have not completed or nearly completed the elementary school course, to enter upon preparation for a trade requiring manual skill.

### **XXX. Vacation Schools**

Vacation schools were first established in the old City of New York and in Brooklyn as a private charity for the children of the poor. In 1900 this work was taken over by the borough school board of Manhattan and The Bronx. In 1902 and following years the work was systematized and extended. I have already referred to the establishment of continuation classes in these schools. Great improvements were made in their work when, under the authority of the Board of Education, teachers and principals were appointed to these schools and also to playgrounds, from eligible lists prepared by the Board of Examiners. With the exception of the continuation classes, the work in the vacation schools is chiefly hand-work—carpentry, chair-caning, sawing, drawing, Venetian iron work for boys; sewing, dressmaking, embroidery, domestic economy for girls; and kindergarten for the little ones.

### **XXXI. Summer Playgrounds**

The summer playgrounds have grown from small beginnings until during the last summer we had about 250 in operation, with an average daily attendance of about 120,000 children. These playgrounds are divided as follows: Afternoon playgrounds for boys; afternoon playgrounds for girls; morning and afternoon playgrounds for mothers and babies; and evening roof playgrounds in the congested neighborhoods. I venture to assert that no form of public recreation in this city is conducted so economically and so skillfully as the playgrounds under the control of the Educational Department. For details of the work of the vacation schools and playgrounds, I beg leave to refer you to the

reports made by District Superintendent Stitt and District Superintendent Evangeline E. Whitney, published in my Annual Reports since 1902.

### **XXXII. Recreation Centers**

From about the first of November until the middle of the following May we conduct recreation centers in the evening in several schools. These institutions are intended for young men and young women who are at work during the day who do not care to attend evening school, but who are interested in literary and debating club work, in gymnastics, quiet games, reading, and other methods of recreation. The system of appointing from eligible lists after competitive examination has evolved a well-equipped corps of managers of these institutions.

The work of the Board of Education in maintaining recreation activities and in using the public school buildings outside of the regular school hours is limited only by the amount of money appropriated for that purpose by the Board of Estimate and Apportionment. It should be noted further that a playground or a recreation center relies for its clientele only on its immediate neighborhood. The necessities for additional appropriations cannot, therefore, be gauged by increase in attendance, as the necessities for increased accommodations for day schools are measured.

### **XXXIII. Type of School Building Peculiar to New York**

The policy of the educational authorities of this city to use the public school buildings as far as the money granted for this purpose by the Board of Estimate and Apportionment will permit for purposes of instruction and recreation outside of the regular school hours, has developed a type of school building which, I think, is peculiar to New York. The peculiarities of this building are the large assembly-room and the covered playground which occupies nearly all of the first floor space. The large assembly-room provides not only for the school assemblies but for the public school lectures. The covered playground provides play space in all weathers and makes possible both the play-work of the summer and the recreation center of the winter. In addition to these features we have placed roof playgrounds on several school buildings in congested neighborhoods. The reason which prompted the building of roof playgrounds was the impossibility of securing open air playgrounds in the vicinity of the building, because of the excessive costliness of land. These roof playgrounds are used not only by the school children of the day schools whenever weather permits, but, as you doubtless saw last summer, by thousands of children on summer evenings. They prove a veritable refuge from the foul odors and excessive heat of the streets in the tenement-house areas.

## EVENING SCHOOLS

Neither the work nor the attendance in evening schools is as satisfactory as I could wish it to be. The following are the chief events in the history of evening schools that have occurred since 1901:

The benefits of evening schools have been extended to all boroughs. Prior to 1898, as far as I can learn, there were no evening schools in the boroughs of Queens and Richmond.

In 1902 the teaching of English to foreigners was reorganized and systematized. The system of teaching was based largely on the Gouin plan of teaching foreign languages.

During the year 1903-1904 a new provision in the Compulsory Education Law went into effect, by which boys who leave the elementary schools without completing the course are required to attend evening school until they are sixteen years of age.

During the school year 1903-1904 the evening school sessions were reduced to four per week; formerly there had been five.

In 1904 appointment from an eligible list prepared by the Board of Examiners was introduced in evening schools. Many of the teachers who had formerly been employed to teach English to foreigners were refused places on the eligible list and consequently were not re-appointed, because of their defective knowledge of English.

In this year also was introduced the practice which has since been kept up, of having inter-school debates between teams from evening high schools.

In 1905-1906 evening trade schools were established in the Manual Training High School, of Brooklyn, and in the Bryant High School, in Long Island City.

In 1906-1907 a Committee on Employment was organized by the students of the Harlem Evening High School for Men.

During the same year the first evening school paper was published, called the "Harlem Evening High School News."

In 1907-1908 a tentative course of study for evening high schools was put into operation.

During the same year classes to instruct teachers in the use of the free-arm movement penmanship were organized in the evening high schools.

During 1908-1909 the third evening trade school was organized in the Stuyvesant High School building, Manhattan.

During this year also the high school course of study, which had been on trial for two years, was adopted. The object of this course is, instead of the purely elective system which formerly prevailed, to require each student to pursue a systematic course of work in one or two or three related subjects covering a period of years.

In 1909-1910 many elementary evening schools were organized in outlying districts where formerly there had been none.

In the summer of 1910 the experiment of an evening school during July and August, to teach English to foreigners was tried in P. S. 22.

During the summer of 1911 two summer evening schools were in operation—one in P. S. 25, Manhattan, and the other in P. S. 62, Manhattan.

In 1909-1910, the establishment of evening high school club and recreation meetings on Friday evenings was commenced.

### STAMMERERS AND STUTTERERS

An attempt has been made during the last two or three years in four of the Manhattan public schools to cure children afflicted with stammering and stuttering. These schools are the following: P. S. 166, 2, 12, and 64.

### COMPULSORY EDUCATION LAW

The City Superintendent of Schools has taken an active part in securing amendments to the Compulsory Education Law. The first of these was the extension of the compulsory school age upwards to sixteen years, provided the child is not at work in accordance with the law, between the ages of fourteen and sixteen. The second is in the provision that children during the compulsory school age must attend school during all of the time that the school attended is in session. The third is the extension of the lower limit of the compulsory age from eight to seven. The fourth is making illegal employment of the child a misdemeanor, punishable by fine. Formerly the penalty could be collected from the offending employer only by civil process. The fifth is the provision which places the burden of proof on the parent in case the child does not attend school regularly.

The City Superintendent also took an active part in securing the enactment of the present labor law and the newsboy law.

For the better enforcement of the labor law it is now required that all children applying for school records to present to the Department of Health as a preliminary to securing an employment certificate, if they have not been promoted to a class higher than 6B, must pass an examination conducted at stated intervals under the direction of the District Superintendent.

While the newsboy law is not uniformly enforced because of the small number of attendance officers for so large a city, yet I believe it has worked much good.

### A DAY SCHOOL FOR TRUANTS

Six years ago a day school for truants was established in P. S. 120, Manhattan, Miss Olive M. Jones, principal. This school was and still is an experiment in treating cases of truancy without confining the boys

in an institution. The principal claims that over 350 boys have been permanently reformed and that a course of study, methods of teaching, and methods of discipline adapted to the delinquent boy have been developed.

### SCHOOL BATHS

The school bath is gradually becoming an important feature of school work in tenement-house neighborhoods. The school baths are very largely used during the summer months, in connection with the vacation schools and playgrounds. Their use throughout the year by the pupils of the day schools is retarded by the fact that no appropriation has ever been made for their use and that we are limited in the employment of bath attendants by the amount which we are able to save from the appropriation for vacation schools, playgrounds, and recreation centers.

### KINDERGARTENS

Prior to 1898 there were seven kindergartens in Queens, and none in Richmond, and very few in Manhattan, The Bronx, and Brooklyn. The extension of the kindergarten system has been one of the features of the development of our schools.

### SCHOOL LIBRARIES

Shortly after the reorganization of the school system in 1898, the Board of Education decided to do systematically throughout the greater city what many individual teachers and schools had been doing for several years; that is, collecting and maintaining children's libraries for the classrooms.

In July, 1902, a Bureau of Libraries was authorized and in February of the following year a Superintendent of Libraries appointed. The plan adopted by the Board of Education was to place in each classroom of the elementary schools from thirty to fifty books, carefully selected, and graded to the capacity of the children for reference in school and for home reading. These small libraries in the hands of interested teachers it was thought would be of great value, not only in school work, but in developing in the pupils a taste for good literature, in giving them some knowledge of books other than text-books, and in enabling them to use more intelligently the public libraries.

The State of New York has been aiding school libraries since the days of De Witt Clinton. It contributes each year for school libraries as much as the City of New York raises for that purpose under the law, or about \$2.00 per teacher employed. This fund had accumulated for several years and there was in 1903 \$138,976 available for the 484 schools in the five boroughs. As a result of the expenditure of this entire sum for books, some class libraries were organized in every ele-

mentary school, and at the end of the school year 1903-1904 there were 7,981 such libraries in operation containing 246,148 books. Each school was also provided with a small reference and teachers' library. The number of volumes used for this purpose was 113,412, making the entire number of books in the school libraries of the city at that time 359,560. The first circulation report showed that during the year 2,308,601 volumes had been issued for school use.

These libraries have now been maintained and extended gradually for eight years on an annual amount averaging \$4.00 per class. Owing to the steadily increasing circulation, the consequent hard usage and heavy withdrawals, it will probably never be possible to give all the primary classes in the system libraries on the present income for books. Every school, however, has some books and many have completed their libraries. At the close of the present school year, June 30, 1911, there were 12,765 classroom libraries containing 472,482 books.

The circulation reports from the children's libraries of this year show that the 600,000 patrons of the class libraries drew 7,923,054 books during the year; that 251,971 volumes were drawn from teachers' reference libraries, making a total circulation of 8,175,025 for the 618,314 books in use during nine months. This report does not include the recorded use in the first year classes where the library books are not taken from the rooms.

In the Bureau of Libraries each year hundreds of children's books are examined, authorized lists for the different grades are prepared for adoption and finally published in the form of an annotated catalogue, over 100,000 volumes are purchased annually, through the Department of Supplies, a School Library Bulletin, calling attention to children's books of accepted worth by excerpts, pictures, short reviews, and bibliographies, is published monthly and sent to each grammar class. A catalogue is sent to classify and arrange the larger collections of teachers' reference books, for each school is provided with standard books on teaching and educational subjects as well as its system of classroom libraries.

Combined, these branch libraries in each school form one of the largest libraries in the country in number of books, and in recorded use the largest circulating library in the world.

### PLANS NOT YET CARRIED OUT

Among the recommendations which I have made to the Board of Education and which the Board of Education has approved, except in the case of a Department of Hygiene, but which have not been carried out because no money has been granted for the purpose by the Board of Estimate and Apportionment, are the following:

1. The establishment of summer sessions in high schools to aid those who fail of promotion during the preceding year, and to enable

bright students to accomplish the high school course in less than four years.

2. The establishment of a Vocation Bureau, to make special studies of the aptitudes of high school students and to guide them to those kinds of employment for which they are best adapted.

3. The establishment of a department of child hygiene. It is proposed that the Board of Education should employ physicians under its own control to make physical examinations of school children, nurses to attend to small defects, and to advise parents, and generally to "follow up" the discovery of defects by securing adequate treatment.

4. The employment of visiting teachers to bring the parents of unruly, backward, or discontented children into closer relation with the teachers; to make a special study of extraordinary cases and to rectify abuses.

5. The establishment of an afternoon playground properly administered, in connection with every school building that has any facilities for the purpose, in a congested neighborhood. In connection with this playground, work-shops, cooking rooms and gymnasiums should be freely used.

Very truly yours,

WM. H. MAXWELL,

City Superintendent of Schools.





**THE REPORT AS A WHOLE**



REPORT  
ON THE  
EDUCATIONAL ASPECTS OF THE SCHOOL INQUIRY

PART I

LETTER OF TRANSMITTAL

CITY OF NEW YORK,  
July 1, 1912.

Hon. JOHN PURROY MITCHEL, *Chairman*;  
Hon. WILLIAM A. PRENDERGAST,  
Hon. CYRUS C. MILLER,

*Committee on School Inquiry of the Board of Estimate and  
Apportionment, City of New York.*

GENTLEMEN :

I submit herewith the report of my associates and myself on the educational aspects of the school inquiry, which I have directed since June 1, 1911.

We have not attempted an investigation of all the educational aspects of the school system of New York City; but the report is comprehensive and our recommendations are far-reaching. If carried out, they involve, in important respects, a reorganization of the public school system as a whole, and point out the way to improvements in the details of organization, administration, supervision, courses of study, and teaching.

Though our work concerns specifically the educational aspects of the school system, we studied, at your request, certain budget questions, and two of them—the methods of estimating the need of teachers for elementary schools and for high schools—have been studied in detail. The report consists of two parts, for convenience. Part I contains, besides statistical summaries and an account of the conditions under which our inquiry was carried on, "The Report as a Whole," an interpretation of the entire report including summaries, principal findings and the recommendations based on them. Part II consists of the reports of the specialists on their several fields of inquiry. Without these reports the generalizations of Part I are, for the most part, without the foundation on which they rest. Moreover, these details will be demanded by the professional reader; and some of them, we believe, illustrate methods of studying the problems dealt with that are either new or have not been employed in the study of similar problems heretofore.

PAUL H. HANUS,

In Charge of Educational Aspects of the School Inquiry.



REPORT ON  
EDUCATIONAL ASPECTS OF THE  
PUBLIC SCHOOL SYSTEM  
OF THE CITY OF NEW YORK

TO THE  
COMMITTEE ON SCHOOL INQUIRY  
OF THE BOARD OF ESTIMATE  
AND APPORTIONMENT

PART I  
LETTER OF TRANSMITTAL, INTRODUCTION,  
AND  
THE REPORT AS A WHOLE

BY  
PAUL H. HANUS

CITY OF NEW YORK  
1911-1912



## TABLE OF CONTENTS

### Introduction

	Page
<b>A. Outline of the Organization and Plan of Administration and Supervision of the School System of the City . . . . .</b>	<b>107-111</b>
Board of Education . . . . .	107
Board of Superintendents . . . . .	108
City Superintendent of Schools . . . . .	108
District Superintendents . . . . .	110
Board of Examiners . . . . .	110
Board of Retirement . . . . .	111
<b>B. Magnitude and Variety of the Activities Controlled by the Board of Education—General Statistics. . . . .</b>	<b>111-117</b>
<b>C. Scope, Aims, Organization and Methods of the Inquiry . . . . .</b>	<b>118-29</b>

### The Report as a Whole

Principles on Which the Inquiry is Based . . . . .	132-33
Purpose, Limitations, and Methods of the Inquiry . . . . .	133-34
Standards in Education . . . . .	134-37

### I. Elementary Schools

The Quality of Classroom Instruction . . . . .	137-42
The Course of Study . . . . .	137-42
The Supervision by the Principals . . . . .	137-42
Corporal Punishment . . . . .	142
Vocational Guidance . . . . .	142
Ungraded Classes . . . . .	143
The Courtis Tests in Arithmetic . . . . .	144
Problems in Elementary School Organization and Administration . . . . .	145-52
Intermediate Schools . . . . .	146
Promotions, Non-promotions, and Part-Time . . . . .	148
*Estimating for Budget Purposes the Number of Teachers Needed in Elementary Schools . . . . .	152
The Compulsory Attendance Service . . . . .	152

### II. Vocational (Industrial) Schools

What Kinds of Vocational Schools Are Needed? . . . . .	155
--	-----

\* The report on this topic could not be ready in time to be included in the report submitted by me to the Committee. P. H. H

	Page
III. High Schools . . . . .	159-78
"Courses" (Programs) of Study, except Commercial Courses . . . . .	161
The General Course . . . . .	162
Special Courses and Special Schools . . . . .	167
Commercial High Schools and Commercial Courses in High Schools . . . . .	168
Problems in Organization and Administration . . . . .	172
The Size of Sections (Classes) . . . . .	173
The Work of Chairmen of Departments . . . . .	174
The Work of Other Teachers . . . . .	175
Administrative Control of the High Schools . . . . .	176
Estimating the Need of High School Teachers . . . . .	177
IV. The System of General Supervision and the Board of Examiners	178-86
Principals . . . . .	179
District Superintendents . . . . .	180
Directors and Assistant Directors of Special Branches . . . . .	181
City Superintendent and Board of Superintendents . . . . .	181
Board of Superintendents . . . . .	183
Board of Examiners . . . . .	185
V. The Board of Education and Local School Boards . . . . .	186
The Board of Education . . . . .	186
The Local School Boards . . . . .	193



# INTRODUCTION

PAUL H. HANUS

## A. OUTLINE OF THE ORGANIZATION AND PLAN OF ADMINISTRATION AND SUPERVISION OF THE SCHOOL SYSTEM OF THE CITY<sup>1</sup>

### BOARD OF EDUCATION

#### MEMBERS

1. Appointed by the Mayor for a term of five years.
2. From boroughs: Manhattan, 22; The Bronx, 4; Brooklyn, 14; Queens, 4; Richmond, 2; total, 46 members.
3. Each member assigned by the President to membership of one of the forty-six Local School Boards.

#### POWERS AND DUTIES

1. Has the powers of a corporation.
2. Represents school system before Board of Estimate.
3. Uses, controls, and disposes of school property.
4. Enacts by-laws.
5. Establishes and conducts elementary, high, evening, vacation schools, etc.
6. Provides training schools for teachers.
7. Maintains nautical school.
8. Maintains free lectures.
9. Appoints janitors.
10. Adopts or modifies courses of study upon recommendation of Board of Superintendents.
11. Approves text-books upon recommendation of Board of Superintendents.
12. Designates kinds and grades of licenses upon recommendation of Board of Superintendents.
13. Appoints principals and teachers from eligible lists upon nomination by Board of Superintendents.
14. Has care and management of retirement fund and establishes rules and regulations for its administration.
15. Retires teachers.

<sup>1</sup> Taken literally from or based on the Thirteenth Annual Report (1910-1911) of the Superintendent of Schools to the Board of Education of The City of New York.

16. Tries charges against principals or teachers; approves or modifies decisions reached by local school boards upon trials of teachers.
17. Administers general school fund (3 mills on assessed valuation of city property for teachers' salaries, and additional funds granted by financial authorities of the city), and special school fund (for other purposes).
18. Acts as board of trustees of Normal Collège.

#### BOARD OF SUPERINTENDENTS

City Superintendent of Schools (Chairman, *ex officio*), and eight Associate City Superintendents. For administrative purposes the City Superintendent has divided the city into seven large divisions, and assigned an Associate City Superintendent to each division to supervise the work of the District Superintendents, to receive and digest their reports, and to represent the interests of his division in the Board of Superintendents.

The Committees of the Board of Superintendents for the school year 1910-1911 were as follows:

- Committee on Nomination, Transfer, and Assignment.
- Committee on School Management.
- Committee on Course of Study.
- Committee on Text-books, Libraries, and Supplies.
- Committee on High Schools.
- Committee on Training Schools.
- Committee on Evening Schools.
- Committee on Vacation Schools, Playgrounds, and Recreation Centers.
- Committee on Compulsory Education.
- Committee on Records, Forms, and Reports.
- Committee on Vocational Schools, and Classes for Defectives.

#### CITY SUPERINTENDENT OF SCHOOLS

1. Appointed by the Board of Education for six years.
2. Powers and duties:
  - (a) Has seat in Board of Education, but no vote.
  - (b) Reports to Board of Education on the condition and needs of the schools.
  - (c) Visits and inspects schools.
  - (d) Advises and encourages teachers, pupils, and officers.
  - (e) Prescribes blanks, forms, registers, etc.
  - (f) Submits annual report.
  - (g) Is chairman, *ex officio*, of Board of Superintendents.
  - (h) Holds conferences with superintendents and principals.
  - (i) Assigns duties of Associate and District Superintendents, subject to by-laws of Board of Education.

- (j) Assigns twenty-three District Superintendents each to two districts for one year, and reassigns at pleasure; assigns remaining three District Superintendents to special duties, one to visit high schools, one to have charge of evening schools, and one to have charge of the vacation schools, playgrounds, and recreation centers.
- (k) Is chairman, ex officio, of Board of Examiners.
- (l) Nominates members of Board of Examiners.
- (m) Enforces compulsory education law; nominates and supervises attendance officers.
- (n) Is a member of the Board of Retirement.
- (o) Appoints and dismisses members of the clerical force in his office, subject to confirmation by the Board of Education.
- (p) Is a member of the Permanent Census Board.

#### BOARD OF SUPERINTENDENTS

##### 1. Members: The City Superintendent and eight Associate City Superintendents.

- (a) Appointed by the Board of Education for a term of six years.

##### 2. Powers and duties:

- (a) Recommends to the Board of Education the establishment of schools, kindergartens, and special features in schools.
- (b) Increases or decreases number of classes in schools.
- (c) Recommends kinds and grades of licenses, and qualifications therefor.
- (d) Nominates from eligible lists, for appointment, transfer, or promotion, all members of teaching and supervising staff.
- (e) Assigns special teachers to districts.
- (f) Keeps records of teachers, open to superintendents, principals, and teachers (their own records only).
- (g) Determines merit and fitness of principals and teachers for increase of salary.
- (h) Excuses absences of teachers with pay, and grants leave of absence to teachers without pay.
- (i) Makes rules for promotion and graduation of pupils.
- (j) Recommends courses of study.
- (k) Issues syllabuses in connection with course of study.
- (l) Recommends text-books and other supplies.

## DISTRICT SUPERINTENDENTS

1. Appointment: Twenty-six, appointed by Board of Education on nomination by Board of Superintendents for term of six years. Twenty-three of the District Superintendents are assigned to school districts, two districts to each superintendent; one is assigned to vacation schools, playgrounds, and evening recreation centers; one to high schools, and one to evening schools.

## 2. Powers and duties:

- (a) Visit and examine schools under direction of City Superintendent.
- (b) Report to City Superintendent on the condition and needs of the schools.
- (c) Advise, assist, and encourage pupils, teachers, and principals.
- (d) Conduct conferences with principals and teachers.
- (e) Rate principals and teachers at least once a year.
- (f) Investigate all complaints within their districts.
- (g) Report gross misconduct of principals and teachers, and suspend for the same.
- (h) Assign teachers of special branches to schools.
- (i) Approve, disapprove, or modify all requisitions of principals for supplies.
- (j) Attend meetings of local school boards.
- (k) Are to be in their offices on specified days.
- (l) Keep records of the district.
- (m) Make recommendations to City Superintendent as to proper accommodation for all children of school age.
- (n) Enforce compulsory education law, under the direction of the City Superintendent of Schools.

## BOARD OF EXAMINERS

1. Members: City Superintendent, together with four persons nominated by him and appointed by the Board of Education, for a term of six years.

## 2. Powers and duties:

- (a) Holds such examinations as City Superintendent may prescribe.
- (b) Grants licenses.
- (c) Prepares eligible lists.

3. Physicians: One man and one woman, to examine applicants for licenses and to certify as to physical condition.

## BOARD OF RETIREMENT

1. Members: The President of the Board of Education, the Chairman of the Committee on Elementary Schools, the Chairman of the Committee on High Schools, the City Superintendent of Schools, all ex officio, and three members of the teaching force elected for three years by the principals and teachers.

2. Powers and duties: Recommends members of the teaching and supervisory force for retirement.

B. MAGNITUDE AND VARIETY OF THE ACTIVITIES CONTROLLED BY THE BOARD OF EDUCATION—  
GENERAL STATISTICS

## NUMBER AND CLASSIFICATION OF SCHOOLS

At the close of the school year 1910-1911 the number of schools in operation in each of the boroughs was as follows:

## DAY SCHOOLS

Borough	Training Schools	High Schools and H. S. Depts.	Elementary Schools	Truant Schools	Vocational Schools	School for the Deaf	Nautical School	Total
Manhattan.....	1	5	167	1	2	1	1	178
The Bronx.....	.	1	44	.	.	.	.	45
Brooklyn.....	1	7	166	1	.	.	.	175
Queens.....	1	6	86	1	.	.	.	94
Richmond.....	.	1	34	.	.	.	.	35
Entire City.....	3	20	497	3	2	1	1	527

## EVENING SCHOOLS

Schools	Manhattan	Bronx	Brooklyn	Queens	Richmond	Total
Evening High Schools...	6	1	7	1	1	16
Evening Trade Schools..	1	.	1	.	.	2
Evening Elem. Schools..	41	7	31	16	6	101

## VACATION SCHOOLS, PLAYGROUNDS, RECREATION CENTERS

Schools	Manhattan	Bronx	Brooklyn	Queens	Richmond	Total
Vacation Schools.....	14	2	13	3	.	32
Evening Recreation Centers.....	25	3	11	2	2	43
Vacation Playgrounds:						
Indoor.....	55	7	39	6	4	111
Mothers' and Babies', A. M.....	42	2	10	.	.	54
Mothers' and Babies', P. M.....	32	.	23	.	.	55
Open Air.....	6	1	1	.	1	9
Kindergarten Centers.....	5	.	2	.	.	7
Evening Playgrounds....	10	.	2	.	.	12

In addition there are 47 corporate schools, industrial schools, and orphan asylums that receive a share of the general school fund.

## GENERAL STATISTICS

The following table presents the net enrollment, average register, and the average attendance of pupils in all the schools of the city during the year 1910-1911, as compared with the corresponding figures for 1909-1910, the average register in the different classes of schools, and other general facts of interest:

## ALL SCHOOLS

	1909-10	1910-11	Increase	Per Cent.
Net enrollment.....	747,223	770,243	23,020	3.08
Average monthly register.....	659,495	677,962	18,467	2.80
Average daily attendance.....	586,673	603,455	16,782	2.86
Per cent. of average daily attendance on average register.....	89	89	...	...

## TRAINING SCHOOLS FOR TEACHERS

(THEORY DEPTS.)

	1909-10	1910-11	Increase	Per Cent.
Net enrollment.....	2,694	2,682	*12	*0.45
Average monthly register.....	2,169	2,111	*58	*2.67
Average daily attendance.....	2,134	2,051	*83	*3.89
Per cent. of average daily attendance on average register.....	98	97	*1	*1.02
Number of principals.....	3	3	...	....
Number of teachers.....	96	100	4	4.17
Average number of pupils to a teacher based on the average register.....	23	21	*2	*8.70

\*Decrease.

NOTE.—The term net enrollment means the number of different pupils taught during the school year.

A graduate from an Elementary School who enters a High School and a graduate from a High School who enters a Training School for Teachers is counted in both schools, however.

The term average monthly register means the average number of pupils on register each month during the school year, and is obtained by adding one-half of the number of pupils on register on the first day and on the last day of each month, and dividing the sum of these by the number of months the school has been open.

The average daily attendance means the average number of pupils in attendance on each day of the school year, and is obtained by dividing the aggregate days of attendance by the actual number of school days.

## HIGH SCHOOLS

	1909-10	1910-11	Increase	Per Cent.
Net enrollment.....	50,902	54,286	3,384	6.65
Average monthly register.....	35,107	38,202	3,095	8.80
Average daily attendance.....	30,252	32,492	2,240	7.40
Per cent. of average daily attendance on average monthly register.....	86	85	*1	*1.16
Number of principals.....	17	19	2	11.76
Number of teachers.....	1,283	1,429	146	11.38
Average number of pupils to a teacher based on the average register.....	27	27	...	....

\*Decrease.

## EDUCATIONAL INVESTIGATION

## VOCATIONAL SCHOOLS

	1909-10	1910-11	Increase	Per Cent.
Net enrollment.....	381	1,414	1,033	271.13
Average monthly register.....	171	647	476	278.36
Average daily attendance.....	109	521	412	377.99
Per cent. of average daily attendance on average monthly register.....	64	81	17	26.56
Number of principals.....	1	1	..	.....
Number of teachers.....	4	16	12	300.00
Average number of pupils to a teacher based on the average register.....	43	40	*3	*6.98

\*Decrease.

## ELEMENTARY SCHOOLS (EXCLUDING KINDERGARTENS)

	1909-10	1910-11	Increase	Per Cent.
Net enrollment.....	650,283	666,558	16,275	2.50
Average monthly register.....	597,544	611,254	13,710	2.29
Average daily attendance.....	534,222	547,295	13,073	2.45
Per cent. of average daily attendance on average monthly register.....	89	90	1	1.12
Number of principals and heads of departments.....	853	858	5	.59
Number of teachers.....	14,095	14,334	239	1.70
Average number of pupils to a class based on the average register.....	42	42	...	....

## SCHOOL FOR THE DEAF

	1909-10	1910-11	Increase	Per Cent.
Net enrollment.....	169	197	28	16.57
Average monthly register.....	154	187	33	21.43
Average daily attendance.....	131	158	27	20.61
Per cent. of average daily attendance on average monthly register.....	85	84	*1	*1.18
Number of principals.....	1	1	..	.....
Number of teachers.....	17	21	4	23.53
Average number of pupils to a teacher based on the average register.....	9	9	..	.....

\*Decrease.



Above are included in the elementary school statements.

## KINDERGARTEN CLASSES

	1909-10	1910-11	Increase	Per Cent.
Net enrollment.....	42,963	45,303	2,340	5.45
Average monthly register.....	24,504	25,748	1,244	5.08
Average daily attendance.....	19,956	21,096	1,140	5.71
Per cent. of average daily attendance on average monthly register.....	81	82	1	1.23
Number of teachers.....	786	823	37	4.71
Average number of pupils to a class based on the average register.....	30	30	...	....

## SUPERINTENDENTS, DIRECTORS, ETC.

	1909-10	1910-11	Increase	Per Cent.
Number of superintendents.....	35	35	..	....
Number of directors of special branches.....	10	9	*1	*10.00
Number of assistant directors of special branches.....	3	4	1	33.33
Number of inspectors and assistant inspectors of special branches.....	8	8	..	....
Number of teachers of special branches.....	464	479	15	3.23

\*Decrease.

## EVENING HIGH SCHOOLS

	1909-10	1910-11	Increase	Per Cent.
Number of schools.....	15	18	3	20.00
Number of pupils enrolled.....	29,287	34,213	4,926	16.82
Average nightly register.....	12,673	14,554	1,881	14.84
Average nightly attendance.....	9,343	10,829	1,486	15.90
Per cent. of average attendance on average register.....	74	75	1	1.35
Number of class teachers.....	496	516	20	4.03

## EDUCATIONAL INVESTIGATION

## EVENING ELEMENTARY SCHOOLS

	1909-10	1910-11	Increase	Per Cent.
Number of schools.....	96	101	5	5.21
Number of pupils enrolled.....	80,369	93,519	13,150	16.36
Average nightly register.....	40,769	45,623	4,854	11.91
Average nightly attendance.....	27,725	30,378	2,653	9.57
Per cent. of average attendance on average register.....	68	67	*1	*1.47
Number of class teachers.....	1,422	1,360	*62	*4.36

\*Decrease.

## VACATION SCHOOLS

	1910	1911	Increase	Per Cent.
Number of schools.....	30	32	2	6.67
Aggregate attendance.....	555,098	611,043	55,945	10.08
Average daily register.....	21,434	23,302	1,868	8.72
Average daily attendance.....	18,504	20,367	1,863	10.07
Per cent. of average daily attend- ance on average daily register.	86	87	1	1.16
Number of class teachers.....	501	574	73	14.57

## VACATION PLAYGROUNDS

	1910	1911	Increase	Per Cent.
Number of playgrounds.....	250	248	*2	*.80
Aggregate attendance.....	5,609,081	5,955,460	346,379	6.18
Average daily attendance.....	119,335	125,528	6,193	5.19
Number of teachers.....	706	838	132	18.70

\*Decrease.

## EVENING RECREATION CENTERS

	1909-10	1910-11	Increase	Per Cent.
Number of recreation centers ...	36	43	7	19.44
Aggregate attendance.....	2,165,457	2,088,415	*77,042	*3.56
Average nightly attendance.....	12,985	16,805	3,820	29.42
Number of teachers.....	161	213	52	32.30

\*Decrease.

# INTRODUCTION

117

## PUBLIC EVENING LECTURES

	1909-10	1910-11	Increase	Per Cent.
Number of centers.....	166	177	11	6.63
Number of lectures.....	5,196	5,411	215	4.14
Aggregate attendance.....	959,982	955,074	*4,908	*.51
Average nightly attendance.....	185	176	*9	*4.86

\*Decrease.

## LIBRARIES ELEMENTARY SCHOOLS

	1909-10	1910-11	Increase	Per Cent.
Volumes in class libraries.....	462,994	472,482	9,488	2.05
Volumes circulated.....	7,494,791	7,923,054	428,263	5.71
Volumes in reference libraries...	148,448	145,832	*2,616	*1.76
Volumes circulated.....	210,685	251,971	41,286	19.60

\*Decrease.

## HIGH SCHOOLS

	1909-10	1910-11	Increase	Per Cent.
Volumes in libraries.....	75,138	79,545	4,407	5.8
Volumes issued for home use....	80,504	97,516	17,012	21.13

## THE TOTAL SUPERVISING AND TEACHING FORCE

The following table shows the total supervising and teaching force for all the schools as it was distributed between the sexes on July 31, 1911:

	Men	Women	Total
Superintendents.....	32	3	35
Directors of special branches.....	5	4	9
Assistant directors of special branches.....	2	2	4
Inspectors and assistant inspectors.....	3	5	8
High school principals.....	19	...	19
High school teachers.....	707	768	1,475
Assistants to principals not teaching, in elementary schools.....	26	405	431
Training school principals.....	2	1	3
Training school teachers.....	22	84	106
Vocational school principal.....	1	...	1
Vocational school teachers.....	8	8	16
Elementary school principals.....	216	211	427
Elementary school teachers.....	1,074	13,285	14,359
Special teachers of special branches.....	136	343	479
Kindergartners.....	...	823	823
	2,253	15,942	18,195

These figures do not include teachers in evening schools, or in recreation centers, or in vacation schools and playgrounds.

#### DIRECTORS AND ASSISTANT DIRECTORS OF SPECIAL BRANCHES

The directors of special branches are assigned as follows:

Music.—1 Director; 1 Assistant Director.

Drawing.—1 Director (elementary schools); 1 Director (high schools).

Shopwork.—1 Director (elementary schools).

Physical Training.—1 Director; 3 Assistant Directors.

Sewing.—1 Director for Manhattan, The Bronx, and Richmond.  
1 Director for Brooklyn and Queens.

Cooking.—1 Director.

Kindergarten.—1 Director.

#### TEACHERS OF SPECIAL BRANCHES

The teachers of special branches are employed to aid the regular class teachers, except in the matters of foreign languages, cooking, and shopwork; in these branches they teach the pupils directly.

In Manhattan there is one supervising officer in the elementary schools for every 18.1 teachers; in The Bronx there is one supervising officer for every 18.8 teachers; in Brooklyn there is one supervising officer for every 17.4 teachers; in Queens there is one supervising officer for every 16.3 teachers; and in Richmond there is one supervising officer for every 16.7 teachers.

#### DISTRIBUTION OF PUPILS

The table on page 119 shows the proportion of pupils in the schools, those in high schools, those in elementary schools, those in training schools, those in vocational schools, and those in kindergartens, in each of the boroughs.

The ages within which the law requires all children of sound body and mind to be in school are seven and fourteen. Seventy-three per cent. of all the pupils in the schools are within these ages.

### C. SCOPE, AIMS, ORGANIZATION, AND METHODS OF THE INQUIRY

The work in New York began on June 1, 1911. But before that time steps had been taken to secure the staff of specialists needed for the inquiry. Nominations of specialists to participate in the inquiry were made, at different times, by the specialist in charge of the work, to President Mitchel, and were approved by him; and, after December 27, 1911,

## AVERAGE MONTHLY REGISTER, SCHOOL YEAR, 1910-1911

Borough	High Schools		Elementary Schools		Training Schools		Vocational Schools		Kindergartens	
	Average Register	Per Cent. of Whole Number	Average Register	Per Cent. of Whole Number	Average Register	Per Cent. of Whole Number	Average Register	Per Cent. of Whole Number	Average Register	Per Cent. of Whole Number
Manhattan.....	13,206	4.7	259,324	91.6	829	.3	647	.2	9,209	3.2
The Bronx.....	3,247	4.5	66,739	92.5	...	..	...	..	2,181	3.0
Brooklyn.....	16,724	6.6	226,257	88.8	1,054	.4	...	..	10,599	4.2
Queens.....	4,213	7.8	46,697	86.4	228	.4	...	..	2,895	5.4
Richmond.....	812	5.8	12,237	88.0	...	..	...	..	864	6.2
	38,202	5.6	611,254	90.2	2,111	.3	647	.1	25,748	3.8

to President Miller, and were approved by him.<sup>1</sup> These specialists were assigned to their several fields of inquiry as fast as they were appointed. Each of them was also informed that, in addition to holding him responsible for results in his particular field, his work and report would be subject, so far as practicable, to the criticism of all.

At the time when correspondence with the specialists we needed began, it was found that most of them could not be secured for continuous service because they were already committed to their regular work at home for the following year, and had also made the usual additional engagements that such men in the educational field of service habitually accept.<sup>2</sup> As the inquiry must go on, it was clear that we must content ourselves with as much of their time as the men could give, with the proviso, however, that each of them should give at least six weeks of service in all.

President Mitchel had informed us that there was uncertainty about the continuance of the inquiry beyond December 31, 1911, although it was expected that the inquiry would be continued. Hence it was necessary to secure the specialists for the staff and plan their work with that in mind. It was evident then (and it has been ever since) that, because of the magnitude and complexity of the New York City school system and the time limits to which the inquiry was restricted, even if it should continue for a year, to do any satisfactory work it would be necessary to limit the general scope of the inquiry, and also to limit the work to be done within each field. And this was stated to President Mitchel.

It was evident also that a detailed plan for the inquiry could be made only after a general survey of the field had been undertaken, and after the conditions under which the work must be carried on were known. A provisional plan was, however, submitted to President Mitchel on June 14, 1911, and met with his approval. This plan was revised and submitted to him again on July 10, 1911, and again met his approval. The final form assumed by the inquiry is substantially the plan of July 10th.

Meanwhile, President Mitchel had told us that he would suggest certain investigations which he hoped we would be able to undertake without disadvantage to the broader aspects of the inquiry as planned; and the work we have undertaken in response to these suggestions was accordingly added to the plan of July 10th.

The work in one field of the inquiry as originally planned was suspended for a time (September, 1911, to January, 1912) owing to Professor Elliott's illness; and one important field had to be abandoned altogether because the specialist who was invited to report on the City

<sup>1</sup>President Miller had become Acting Chairman of the Committee on School Inquiry on account of President Mitchel's illness. President Mitchel resumed the Chairmanship in April, 1912.

<sup>2</sup>Only two members of the staff—Professor Hanus and Dr. Bachman—have been on the ground continuously since the inquiry began. Professor Ballou has been in continuous service since August 12, 1911.

Training Schools for Teachers and had signified his intention of accepting our invitation found it impossible, at a late date, to undertake this work. Efforts to find a suitable successor to him were continued until March, 1912, but without success. Our inquiry into the training schools and after-training of teachers therefore had to be abandoned.

As already stated, the inquiry began on June 1, 1911; it covers three fairly distinct periods of time.

First. From June 1st until about the middle of August. During this period a general survey of the school system was undertaken, and the plan of the inquiry was developed; work on that plan and several inquiries suggested by President Mitchel were begun.

Second. From about the middle of August till the second week of November, during which work on the budget of the Board of Education for 1912 occupied nearly the whole of our time; together with the period of uncertainty about the continuance of the inquiry, extending to the last week in December, 1911. By November the question whether the inquiry should be continued beyond December had become important. Although your Committee, under date of November 29, 1911, requested us to continue the inquiry as planned until July 1, 1912, the possibility of securing the necessary funds was not settled until December 20th, when you directed us to go on with the work. (Your letter informing us that the funds were secured did not reach us, however, until December 27th.) The staff continued its work during this period of uncertainty, but it was manifestly impossible to proceed with any extension of the scope of the inquiry beyond that already assumed prior to November, 1911. During the period of uncertainty, also, our efforts were naturally directed chiefly to bringing to as definite a conclusion as possible the partial results it had been possible to achieve. Toward the end of this period, also, President Mitchel fell ill.

Third. Under date of December 20, 1911; we were directed to proceed, and were informed that, in consequence of President Mitchel's illness, President Miller had become Acting Chairman of the Committee on School Inquiry; and the third period of the inquiry extends from that date to the present time, July, 1912. During this third period, the work as planned during the first period, modified as circumstances required, together with such work on the questions suggested by President Mitchel (referred to above) as we were able to undertake, proceeded uninterruptedly; and it is during this period of concentration on the inquiry as planned that much the greater part of the work with which this report deals was done.

#### INQUIRY INTO PROMOTION, NON-PROMOTION, AND PART-TIME

Our first efforts were directed to an inquiry into certain factors affecting promotions and non-promotions in the elementary schools (including "part-time"), when the inquiry began on June 1st, in accordance with

instructions from President Mitchel, transmitted through Mr. Burdette G. Lewis. The general results of this inquiry are given below, page 148 ff.; and a detailed description of the inquiry itself is given in Dr. Bachman's report, Part II of this report.

#### INQUIRIES SUGGESTED IN PRESIDENT MITCHEL'S LETTER OF JUNE 14, 1911

On June 14, 1911, a letter was received from President Mitchel in which he suggested investigations he hoped we could make in time for the budget hearings on the Board of Education's estimate for 1912. This letter also asked "whether or not the furnishing of this information will defeat plans which you have in mind for the broader inquiry."

President Mitchel's letter asked for an inquiry into the following topics:

- (a) Additional teachers needed to take care of the annual increase of pupils.
- (b) Additional teachers needed to do away with part-time classes, and concerning the alleged evil of part-time classes.
- (c) The advantages of the consolidation of classes.
- (d) The possible advantages of increasing the number of intermediate schools, and the attitude of the Board of Education toward such increase.
- (e) The method adopted by the Board in determining the number of special teachers required.
- (f) The results of departures from the estimates in the recommended budget of last year.
- (g) The influence of visiting teachers on decreasing non-promotion.
- (h) The basis adopted by the Board of Education in determining the largest practical size of high-school classes.
- (i) What trust funds could be used to offset the estimated budget for 1911-1912.
- (k) Whether money enough is spent on attendance officers' work, and the difference of method in the work of attendance officers in the different districts.
- (l) The facility with which teachers absent themselves from school and entail a heavy bill for substitutes.

The wide range of questions in this letter necessitated careful study—especially the possibility of answering the questions in view of the plan of the inquiry already approved, the time for the inquiry, and our financial resources.

It was soon evident that to answer the first question alone would require a larger staff and cost a larger sum of money than were at our disposal.<sup>1</sup>

<sup>1</sup> We were informed by an official of the Finance Department that his Department had under consideration the cost of tabulating the data required for such a purpose as was indicated in Question 1, and that the estimated cost would be ten thousand dollars (\$10,000).



Similarly, to determine the number of special teachers needed on the basis of the actual number of teachers in the service needing the assistance of special teachers and the number of new teachers actually needing such assistance would require a large amount of tabulation of data and a correspondingly large clerical force.

Further study of President Mitchel's questions convinced us that it would be impossible to answer them by the time of the budget hearings on the Board of Education's estimates for 1912; that to answer these questions ourselves by December would probably also be impossible even if we devoted our entire time to them. We accordingly suggested to President Mitchel that he send his questions formulated somewhat differently to President Winthrop of the Board of Education; and we stated our belief that questions that could not be answered in this way could not be answered by direct investigation by our staff.

President Mitchel doubtless approved these suggestions; for he sent a letter dated July 11, 1911, to President Winthrop covering the questions referred to. This letter asked for a reply by September 1, 1911. On that date Mr. Lewis brought President Winthrop's reply to us; but without instructions as to further procedure.

President Winthrop's letter did not give definite answers to several questions, and we accordingly prepared a series of supplementary questions on President Winthrop's answers for such use as your Committee might wish to make of them. No direct use was made of these supplementary questions by your Committee, so far as we know; but some of the questions subsequently formed a part of further investigations already under way or planned for by us.

Although we could not attempt to answer the questions in President Mitchel's letter, we have worked out the method whereby the answers to several of them could be obtained—those questions, namely, relating to

Estimating the need of elementary school teachers.

Intermediate schools.

Estimating the need of high-school teachers ("The largest practical size of high-school classes").

The compulsory attendance service.

—and the results of our investigation of these questions will be found below in "The Report as a Whole"; the detailed reports on the investigations will be found in Part II of this report.

#### WORK ON THE BUDGET

In August we were told that President Mitchel, who was in Europe, would expect us to examine the budget requests of the Board of Education with a view to supplying the information required to test the validity of the Board's requests at the budget hearings in October.

A preliminary study of the budget of the previous year was made pending the receipt of the budget for 1912. The 1912 budget did not

reach our office until about the middle of September. It was manifestly impossible to attempt an adequate analysis of the entire budget of the Board of Education, or even to collect the necessary information on which such an analysis must be based. We<sup>1</sup> decided, therefore, to restrict the scope of our examination of the budget to certain items in the General Fund, and further to limit our study of those items to the increments asked for. We were aware that, even with these restrictions, complete data for our examination of the budget would not be available. We proceeded, however, as carefully as we could. We made a provisional report recommending certain reductions in the estimates of the Board of Education and certain other provisional reports; but because of our inadequate data we proceeded no further.<sup>2</sup>

<sup>1</sup> Professor Hanus and Dr. Bachman were the only members of the staff available for this work; although Dr. Burks gave some assistance apart from his report, mentioned below.

<sup>2</sup> The reductions we recommended are summarized in the following table:

**ELEMENTARY SCHOOLS: NEW TEACHERS**

Term	Number Requested	Number Recommended	Amount Requested	Amount Recommended	Reduction Recommended
Fall Term, 1911 (Schedules Nos. 6 & 9) .	568	224	\$425,250.00	\$154,860.75	\$270,389.25
Spring Term, 1912 (Schedule No. 7) . . . . .	278	11	169,536.16	6,523.33	163,012.83
Fall Term, 1912 (Schedule No. 8) . . . . .	414	276	76,910.77	45,719.45	31,191.32
Total . . . . .	1,260	510	\$671,696.93	\$207,103.53	\$464,593.40

**ATTENDANCE OFFICERS: NEW**

Schedule No. 1 . . . . .	20	0	\$18,000.00	000	\$18,000.00
--------------------------	----	---	-------------	-----	-------------

**VISITING TEACHERS: NEW**

Schedule No. 1 . . . . .	25	0	\$25,000.00	000	\$25,000.00
--------------------------	----	---	-------------	-----	-------------

**EVENING SCHOOLS: EXTENDING THE TERM**

Schedule No. 10 . . . . .	....	...	\$14,564.00	000	\$14,564.00
---------------------------	------	-----	-------------	-----	-------------

Total reductions recommended . . . . . \$522,157.40

The other reports on the budget for 1912 were: Estimated Need of Elementary School Principals; Analysis and Criticism of Method Used to Estimate the Need of Elementary School Teachers for 1912; Estimated Need of Elementary School Teachers for 1912; Estimated Need of Kindergarten Teachers for 1912; and Estimated Need of Manual Training and Cooking Equipment for 1912; and a report by Dr. Burks on the Compulsory Attendance service. These reports have been filed with the Committee on School Inquiry.

In addition to our examination of the budget we were asked to prepare for President Mitchel's use a series of questions on each item of the budget intended to bring out at the hearings the information used by the Board of Education as the basis of its estimates. These questions were prepared and have been filed with the Committee on School Inquiry.

In order to give the Board of Education and its officers an opportunity to prepare themselves to answer the questions likely to be asked at the budget hearings, we prepared a letter to be sent by President Mitchel to President Winthrop of the Board of Education, notifying him of the kind of information the Board of Estimate would require at the hearings; and this letter was sent by President Mitchel on October 2, 1911.<sup>1</sup>

Meanwhile, in July, letters asking for suggestions and comments on aspects of the school system most requiring attention had been sent to the City Superintendent of Schools, each of the eight Associate Superintendents, each of the twenty high-school principals, each of the four members of the Board of Examiners, and to a few of the school commissioners (members of the Board of Education), in order to ascertain the range and kind of thought given to the problems of the school system by those intrusted with their solution. The replies to these letters as they were received were analyzed, and a card catalog of their contents made by Mr. Abbott.<sup>2</sup>

Many of these replies contained fruitful suggestions; and some of them which lay directly in the fields of inquiry assigned to the coöperating specialists have been duly considered.

Meanwhile, also, a study of the course of study for the elementary schools and of the high schools was begun and was carried forward with interruptions until consideration of the budget, described above, commenced. Constant delay was experienced in getting material that was needed for our study of both elementary and high-school courses of study owing largely to the absence of teachers, principals, and superintendents from their schools in vacation time. Gradually, however, information was collected from a dozen cities, and this information has been used in our study of the courses of study described in this report.

Meanwhile, also, in September, letters had been sent to each member of the Board of Superintendents and Board of Examiners, and to each District Superintendent, each high-school principal, and to eighty-three elementary-school principals, asking them certain questions covering the official and voluntary reports on their work made to the Board of Superintendents or to the Board of Education, and intended especially to ascertain how much independence and initiative and how much coöperative activity there is in the supervisory and executive staff of the

<sup>1</sup> Filed with the Committee on School Inquiry.

<sup>2</sup> Mr. Allan Abbott, Head of the Department of English in the Horace Mann School, who served as Secretary to the staff from June 19th to August 12th.

school system. The replies to these letters have been studied, and appropriate use has been made of them by the specialists whose fields of inquiry they cover.

The following table gives the list of specialists engaged on the inquiry, the field of work assigned to each, together with a general statement concerning the length of his service and whether such service was continuous or otherwise. This table conforms closely to the plan of the inquiry approved on July 10, 1911:

PAUL H. HANUS, Professor of Education, Harvard University.

In charge of Educational Aspects of School Inquiry. Continuous Service.

FRANK P. BACHMAN, Assistant Superintendent of Schools, Cleveland, Ohio.

Statistical studies pertaining to the Need of Elementary School Teachers, Promotions and Part-Time, Intermediate Schools. Continuous service since June 5, 1911.

EDWARD C. ELLIOTT, Professor of Education, University of Wisconsin.

Organization and methods of the Supervisory Staff, including the Board of Superintendents, District Superintendents; Directors of Special Branches; Board of Examiners. Service, at intervals; discontinued on account of illness commencing in September; resumed in January, 1912.

FRANK M. McMURRY, Professor of Elementary Education, Teachers' College, Columbia University.

Teachers and teaching in the elementary schools, together with the supervision of their schools by the principals. Also (after December, 1911) elementary school course of study. Service at intervals.

JESSE D. BURKS, Director of the Bureau of Municipal Research, Philadelphia.

Compulsory attendance service. Service at intervals.

HERMAN SCHNEIDER, Dean of the College of Engineering, University of Cincinnati.

Vocational schools. Service at intervals.

FRANK W. BALLOU, Director of School Affiliation and Assistant Professor of Education, University of Cincinnati.

High schools, organization and administration. Continuous service since August 12, 1911.

ERNEST C. MOORE, Professor of Education, Yale University.

Board of Education and Local School Boards. Service almost continuous, commencing January 17, 1912.

CALVIN O. DAVIS, Assistant Professor of Education, University of Michigan, and Inspector of High Schools.

High-school courses of study (except commercial courses). Continuous service for about seven weeks from January 2, 1912.

FRANK V. THOMPSON, Assistant Superintendent of Schools, Boston, Massachusetts.

High School of Commerce, Commercial High School, and commercial courses in high schools. Service at intervals commencing January 15, 1912.

HENRY H. GODDARD, Director Department of Psychological Research, New Jersey Training School for Feeble Minded Boys and Girls.

Ungraded classes. Service at intervals.

STUART A. COURTIS, Head of Department of Science and Mathematics, Detroit Home and Day School, Detroit.

The Courtis tests in arithmetic for about 30,000 children in the 4A-8B grades of the elementary schools and in at least one high school. Service at intervals.

The last five specialists named above were assigned to duty as soon as possible after you directed us, under date of December 20, 1911, to proceed with the inquiry. At that time also Professor Elliott was re-assigned to duty, and the field originally assigned to him was divided between him and Professor Moore; and Professor McMurry was asked to undertake a report on the elementary school course of study, as indicated in the table.

The specialist in charge of the inquiry has devoted a large share of his time, apart from planning and directing the inquiry as a whole, to the plans of the members of the staff<sup>1</sup> and to continuous and detailed supervision of their work and criticism of their reports, as the work and the reports thereon developed. For several of the reports he is equally responsible as to details of subject matter and form with the specialists who sign them.

Also, in accordance with the original plan of work, most of the reports of the specialists were discussed in staff conferences; and all of them would have been had time and circumstances that we could not control permitted, *i. e.*, had it been possible oftener to get the members of the staff together. As it was, many partial staff conferences were held, conferences of individual members of the staff with each other took place daily, and prolonged conferences of one or more members of the staff with the specialist in charge occurred almost every day.

During the progress of the inquiry we have repeatedly received oral and written suggestions and memoranda concerning the inquiry from one of the directors of the Bureau of Municipal Research. At first

<sup>1</sup>"Staff" is used to designate the specialists engaged on the educational aspects of the Inquiry.

these suggestions and memoranda were welcomed and received with interest. But it gradually became apparent that these communications, in large part, represented a spirit and methods widely divergent from our own; hence they were of diminishing interest to us; and since November, 1911, we have pursued our work without reference to them.

The aims of the inquiry are constructive throughout. We have aimed to deal judicially with the achievements, merits, and defects of the school system. But since our chief purpose was constructive criticism we have given most attention to such defects as we have been able to point out. It will be apparent, therefore, that we have not dealt with the defects of the school system in order to give prominence to them, but in order to suggest the means of remedying or minimizing them. We have, of course, sought to ascertain the facts, so far as time and opportunity permitted, and to make such recommendations as the facts justified.

Neither the professional reader nor the lay reader needs to be told that there are very few established standards whereby the efficiency of educational activities may be measured, and that accepted methods of studying such activities are, for the most part, yet to be found. The science of education is, as yet, in its beginning. We have, however, used such standards as are available, and have employed or developed such methods of studying the problems with which we have dealt as commended themselves to our judgment. The methods we have employed are statistical, comparative, and experimental—the last only so far as such methods could be immediately applied by us (*e. g.*, the Courtis Tests in arithmetic and the Binet-Simon Tests for mentally defective children).

At the present time educational opinion rather than organized educational experience is often the only available basis for educational procedure. Consequently some of our recommendations (*e. g.*, those pertaining to courses of study in elementary schools and in high schools, the size of high schools, specialized and general high schools) necessarily rest on such opinion. Such recommendations are regarded by us as a safe basis for experimentation for progressive improvement; but we also urge, once for all, that the fruits of educational experience following the adoption of such recommendations be collected, organized, and carefully appraised, in order that established educational truths may gradually take the place of mere opinion; *i. e.*, we recommend that statistical and experimental methods of study of educational procedure and results be greatly developed and continually applied within the school system itself to confirm or refute educational opinion within the school system and in the community.

We have endeavored throughout, so far as possible, to enlist the co-operation of the supervisory officers and teachers in getting facts, and to some extent in arriving at the conclusions derived from them, and recommendations based on them. It is a pleasure to state that our endeavors in this direction, especially in getting information, met with

a hearty response on the part of the City Superintendent, several of the Associate Superintendents, several members of the Board of Examiners, most of the District Superintendents, and Directors of Special Branches, all of the High-School Principals, several active committees of High-School Teachers, and many Elementary-School Principals whose co-operation we invited. The Board of Education and its Secretary, and the responsible heads of its several bureaus, and nearly all of the Local School Boards have afforded us every facility in getting the facts we sought. We have also had valuable assistance from the Secretary of the Permanent Census Board.

During the progress of the inquiry the question whether it was possible to publish portions of the report in advance of the publication of the final report was considered more than once. We found, however, that such publication was not feasible, because (1) it was manifestly important to minimize the possibility of error in our conclusions by the opportunity to revise them up to the last moment; and, as exigency or opportunity frequently required us to turn from one piece of work before completing it to another, final revision of partially completed portions of the report was repeatedly and necessarily deferred; (2) the time that possible controversies would demand was urgently needed for the inquiry itself; and (3) most of the reports of the contributing specialists were not ready for the printer until the end of May, and some of them were not ready till the last week of June.





## THE REPORT AS A WHOLE<sup>1</sup>

PAUL H. HANUS

The City of New York, with its great area, diversified population of about 5,000,000 people, and complex organization, naturally possesses a huge and complicated school system. Confining the enumeration of the educational aspects of the system to those only which have been dealt with, or, at least, touched in this report, there were in 1910-11, 497 elementary schools; 3 training schools for teachers;<sup>2</sup> 2 day vocational schools; 3 truant schools; 20 high schools and high school departments; together with 16 evening high schools, 2 evening trade schools, and 101 evening elementary schools. These schools and other schools and activities were under the general control of a Board of Education consisting of 46 members, and were also subject to the general oversight of 46 local school boards. The total teaching and supervising force, exclusive of teachers in evening schools, recreation centers, vacation schools, and playgrounds, numbered 2,253 men and 15,942 women, 18,195 persons in all. The average monthly register in all schools was 677,192 and the average daily attendance was 603,455. Magnitude, variety and complexity are accordingly salient and significant features of the school system; and had to be reckoned with in any inquiries, however limited, that could be undertaken.

It was not possible to give any serious study to the problems presented by the Inquiry prior to June 1st, 1911, when our work began. As already stated in the Introduction to the report, the Inquiry covers three fairly distinct periods: (1) from June to the middle of August, when we were adjusting ourselves to the local situation; (2) from the middle of August to the middle of November—the budget period, and the further period of uncertainty about the continuance of the Inquiry till about the end of December, 1911; and (3) from January 1st till July 1st, 1912, when most of the productive work of the Inquiry was done.

<sup>1</sup> This section of the report was written during December, 1912. It could not be written sooner, owing to the late date at which the first drafts of the reports of several of my associates were ready to go to the printer, and to subsequent delays in getting and revising proof. There has been no opportunity for thoroughgoing conferences with my associates concerning the subject matter and form of this section. Accordingly, although most of them have seen and approved the portions dealing with their reports, and although I have sometimes used their own phrases, they should not be held responsible for the form in which I have cast the materials which I have drawn from their reports, nor for the substance or form of some of the recommendations.  
P. H. H.

<sup>2</sup> Originally included in the plan of the Inquiry, but found to be impossible, and abandoned with regret.

Several provisional plans for the Inquiry were drawn up during the early weeks of the first period, but it was not till about July 10th that it was possible to develop the plan which we subsequently followed as closely as time and circumstances permitted. To this plan were added certain inquiries suggested or approved by your Committee, one of which—our work on the budget of 1912—lay wholly outside our own plan, and consumed more than two months of time; but because of our limited staff and the great mass of data required, but not available, ought never to have been undertaken, and was necessarily unsatisfactory to us; and will not be further considered in this account of our work.<sup>1</sup> The others were related to our own inquiries and were made an integral part of them.

The plan adopted and approved by your Committee on July 10th, 1912, was based on the following principles:

1. The scope of the Inquiry as a whole, and in its details, must be restricted to what it is reasonable to expect can be accomplished in the time and with the staff at our disposal.<sup>2</sup>

2. Within the limits thus set we should endeavor to obtain as satisfactory answers as possible to the following questions:

- a. What instruction does the public school system of New York City provide, and is this instruction commensurate with the educational needs of the City in respect to (1) scope; (2) quality; (3) adjustment to individual needs; (4) adjustment to social (including vocational) needs?

- b. (1) Do the technical administration and supervision show professional insight and helpful leadership within and without the school system? (2) Do they actively encourage and promote the professional growth and practical efficiency of the teaching force?

- c. Is the admission of competent and otherwise satisfactory new members of the teaching and supervisory staff properly safeguarded?

- d. Are the general organization and administration of the school system such as to promote the satisfactory discharge of the city's educational responsibility by the Board of Education and the local School Boards?

- e. Further, and in general: (1) Do initiative and coöperation under leadership, or do their opposites—passive conformity to instruction from above on the part of teachers, bureaucratic and chiefly authoritative control by the supervisory staff, and purely authoritative or arbitrary general direction and control by the Board of Education—prevail throughout the school system? (2) Is self-examination habitual throughout the school system, and are the results of educational experi-

<sup>1</sup>For an account of the work done on the budget, see the Introduction to the Report.

<sup>2</sup>This principle does not exclude, however, the definition or statement of problems to be solved by further investigation. Such problems are, indeed, perennial; and the report states many of them and suggests the procedure for their progressive solution.

ence so gathered and used as to become effective guides for future effort? (3) Is there satisfactory provision for disinterested and adequate appraisal of results achieved, including experimental tests, to confirm or refute educational opinion within and without the school system?

As stated in the introduction to the report, the purpose of the inquiry was constructive throughout. We have not failed to appreciate the merits of the school system, and they are many; but since our chief purpose was constructive criticism, we have devoted ourselves more particularly to such defects as we have been able to point out, and to suggestions and recommendations for removing or minimizing them.

The method of the inquiry has been statistical, inspectorial (personal inspection by members of the staff), comparative (comparisons of New York City's schools and school system with those of other cities), and experimental so far as reliable experimental or scientific methods are available in education and could be employed; and we have made much use of conferences with officials and members of the teaching and supervisory staff.

This method throughout aimed to ascertain the facts we needed for the purpose in hand, and to verify the facts and conclusions based on them so far as our time and opportunity permitted. We have been particularly careful not to make statements unsupported by facts where facts were needed; and we consistently objected, in spite of considerable pressure from without during the first months of the inquiry, to issue statements of findings, because we had not yet done all we could to assure ourselves of their validity. Moreover, we had no interest in setting forth defects in the school system until we were ready to make the constructive suggestions that we aimed at, and such suggestions (recommendations) could only be ready near or at the end of our work.

Our method also aimed at the coöperation of officers of the Board of Education and of the supervisory and teaching force in getting facts and in reaching and verifying conclusions; and, as stated in the introduction to the report, it is a pleasure to say that the attitude of the entire staff was, throughout the period of the inquiry, courteous, responsive, and helpful. We sought this coöperation not only because we needed the help of the Department of Education in getting the facts we needed, but also because we desired to interest them in our inquiries. On the basis of their coöperation in pointing out existing defects in the school system, we hoped to stimulate further investigation within the school system itself, to interest all concerned in recommendations for improvement, and so lay the foundation for a satisfactory practical result of our whole endeavor. Besides, in my opinion, any other procedure would not only be futile, but the procedure adopted was the natural procedure, in view of our judicial attitude and constructive purpose.

In accordance with the first principle formulated above, the scope and details of our investigation were restricted to the following fields:

I. Elementary Schools; II. Vocational Schools; III. High Schools; IV. The System of General Supervision and the Board of Examiners; V. The Board of Education and local School Boards.

As specialist in charge of the educational aspects of the inquiry, I assigned the investigations to be undertaken in the fields enumerated to eleven associates nominated by me and approved by the Committee on School Inquiry.<sup>1</sup> These men were drawn from five of the leading universities of the country, two of the largest school systems, two well-known schools, and the Bureau of Municipal Research in a neighboring city. Only two of these men were able to give continuous service to the inquiry, but none of them gave less than six weeks of time to it. My own work, in addition to planning and directing the inquiry as a whole, consisted in active coöperation with my associates in working out the plans of their several investigations, and in detailed and continuous supervision and criticism of their work and reports as the work went on.

### ✓ Standards in Education

There are as yet no universally accepted standards whereby the adequacy of educational aims and practices can be judged.

It is possible, however, by studying the practice of progressive school systems throughout the country to formulate the aims that determine their activities. Such formulations by different individuals will naturally differ in details; but if carefully made, they will agree in most ✓ essential features because they will represent what the American people want their schools to do. I have attempted such a formulation in the following paragraphs. It has been accepted in most particulars by my associates, and in the absence of a universally accepted standard of what instruction in public school systems should offer, it has been used, together with the conclusions reached by my associates in their study of details, to estimate the adequacy or inadequacy of New York City's educational offering, so far as that offering was studied by us.

This attempt to formulate the aims or principles underlying the contemporary provision for and tendencies in American education is as follows:

Public education is a social force—it aims at social welfare and betterment. It is also the means of individual development—the fullest development (self-realization) of which each individual is capable.

As a social force, public education aims to preserve, improve, and transmit the resources of society—to develop in each individual *general* and *specific* social efficiency. *General social efficiency* means social intelligence and the power to deal effectively with social problems. *Specific social efficiency* means vocational efficiency—efficiency in a particular calling.

As a means of individual development public education takes account of the nature of individuals and of the circumstances of their lives. It

<sup>1</sup> For the list of Associates, see the Introduction to the report.

supplies the means of promoting their normal development as socialized human beings. It aims to arouse and develop all the worthy interests and the corresponding powers of each individual, so far as his ability and stage of development permit, in order that his life as an individual may be as full and rich as possible, and that no artificial obstacles may stand in the way of his spiritual or material advancement. Hence,

1. Public education should train efficient citizens—men and women who recognize and appreciate the common interests of our democratic society and are able to promote their progressive development. These interests are spiritual (intellectual, moral, æsthetic), hygienic, economic, civic.<sup>1</sup>

2. Public education should strive gradually to emancipate each pupil from external restraint and guidance, and thus render him self-directing—intellectually, morally, and physically stable, alert, vigorous, and active. Together with the instruction public education offers, it should therefore insist throughout on discipline that is wise, kindly, and firm, including appropriate punishment when it is needed—a discipline that insists on progressive conformity of conduct to insight, including habits of steady application and reasonable achievement.

3. Public education should endeavor to prepare each pupil to make the best use of his leisure as well as of his working hours. Satisfactory diversions and good recreative habits are important for both the individual and society. Without disparaging harmless diversions and amusements, public education should therefore strive to develop an appreciation of, and a demand for, the serious pleasures our civilization affords.

4. Public education should strive to render each pupil economically intelligent and efficient. It should direct each pupil's attention to a vocation to which he may reasonably aspire; that is, every pupil should be led gradually to realize that a suitable vocation, accessible to him and adapted to him, is indispensable to a useful and happy life. As he approaches the end of his school career, whatever his age may be, he should come to see that his vocation will be not only the means of satisfying his personal wants and ambitions, but because it is the chief means of establishing significant relations between himself and his fellow men, it is also the source of such public service as he is capable of and may be called upon to render. Public education should, therefore, provide for the development of vocational purposes based on vocational enlightenment (vocational guidance); and it should offer each pupil appropriate training for the vocation of his choice.

✓ Schools must therefore be so constituted as to provide adequately:

a. The means of appropriate, and, so far as possible, complete gen-

<sup>1</sup> They are also religious; but because experience has shown that religious interests are inseparable from ecclesiastical interests, and society has an institution for promoting both at once—the church—a democratic society like ours wisely delegates the preservation and transmission of religious interests to the church.

eral development (self-discovery, and self-realization, and preparation for general social service for every pupil); and

b. Various kinds of vocational training adapted to the needs, tastes, and future callings of all pupils who pass at once from school to their life work; and for those who wish to improve themselves after they have gone to work (preparation for specific social service, i. e., for usefulness).

They must therefore provide:

1. The elements of general culture, comprising

(a) A satisfactory command of the school arts—the three r's.

(b) An insight into, appreciation of, and power to deal with (1) the recorded ideals and experience of the race; and (2) all worthy interests of contemporary life, so far as they can be rendered interesting, intelligible, and accessible to children and youth of school age; that is to say: the school program (program of studies) must cover:

(a) The school arts—reading, writing, arithmetic.

(b) Language and literature (modern and ancient).

(c) History, government, and economics.

(d) Art (pictorial and plastic art, constructive art, and music).

(e) Mathematics.

(f) Natural science.

(g) Manual arts and domestic arts.

(h) Physical education, including physical training and athletics.

(i) Vocational guidance.

IN

I. Kindergartens.

II. Elementary schools, with differentiated upper grades, and well articulated with the

III. High schools, having as wide a range of electives (administered under wise guidance) as possible.

2. Vocational training (training for specific social service) at the upper end of the Elementary School in industrial and commercial schools, whether called secondary schools or not.

IN

(a) Day vocational schools for normal pupils over fourteen years of age, whether they have completed an eight years' elementary school course or not, and who will not go to a high school.

(b) Day coöperative and continuation schools (vocational) for pupils fourteen to eighteen years of age who cannot afford or will not take the time to attend a day vocational school.

(c) Evening continuation schools, vocational and non-vocational, for pupils over eighteen years of age who are at work during the daytime.

(d) Vocational high schools—vocational schools of secondary grade.

- (1) High schools of commerce.
- (2) High schools of practical arts for both sexes (technical high schools).
- (3) Agricultural high schools.

Or well organized separate departments of (1), (2), and (3) for vocational instruction in general high schools.

But the American people are not satisfied with schools for normal children only. They acknowledge their obligation to do all that can be done for exceptional children as well; hence they provide also schools or classes for

- a. Cripples.
- b. Anæmic and tubercular children.
- c. Incurables and truants.
- d. Blind children.
- e. Deaf children.
- f. Mentally defective children.

New York City meets the foregoing standard of educational opportunity only partially, and in some respects hardly at all.

## I. ELEMENTARY SCHOOLS

This field of the inquiry was subdivided as follows, in accordance with the second principle underlying our entire plan: (1) The Scope and Quality of the Instruction, and its adaptation to individual and social needs and the Supervision by the Principals—one specialist; (2) Ungraded Classes (for Defectives)—one specialist; (3) The Courtis Tests in Arithmetic—one specialist; four administrative problems—(4) Intermediate Schools; (5) Promotions, Non-promotions and Part Time; (6) Estimating the Need of Elementary School Teachers—one specialist; (7) The Compulsory Attendance Service—one specialist.

### (1) Scope and Quality of the Instruction and Supervision by Principals

While the city provides a comprehensive program of elementary education which might conform to the standard formulated above, the actual work of the schools, in large part, both in its spirit and in its details, cannot be commended. While there is much good to excellent teaching, and some equally good to excellent supervision by principals and district superintendents, the quality of the teaching and supervision is, in general, not good. This adverse judgment of the spirit which dominates the actual work of the schools—the spirit of formalism in subject-matter and method, and the disregard for adaptation to social and individual needs—extends also to the course of study and the syllabi; for the quality of the teaching cannot be judged apart from the course of study and the supervision by the principals and superintendents. The course of study is, indeed, fundamental, because it embodies

the aims on which the work of the schools is based; but the supervision by the principals and other supervisors is necessarily a perpetual influence in determining the quality of the teaching; and the syllabi issued by the Board of Superintendents are intended to interpret to all their subordinates the aims and spirit of the course of study, and to suggest the methods whereby these aims and this spirit may be incorporated in their work—and in all these respects, as has been said, the elementary education of the city is, in general, seriously defective.

Our judgment of the details of the course of study and syllabi and of the quality of the teaching and supervision is based on a study of the printed course of study and the syllabi, on actual inspection of the work of the teachers, principals, superintendents and other supervisors, and on conferences with them. Course of study, syllabi, and supervision were judged by their success or failure to provide adequately for the acquisition of certain fundamental habits on the part of the pupils, those habits, namely, which are of vital importance in daily living. The quality of all three depends on the extent to which they accomplish the purpose of enabling the pupils to acquire as good a command of themselves and of their material and social environment (social resources) as their stage of development requires and permits.

To this end the emphasis in the subject matter of instruction (course of study) should be on those elements of it which enable the pupils to assimilate the worthiest ideals, the real issues, and the most useful practices of contemporary life. Or, briefly, that subject matter is most valuable that enables the pupil to appreciate and to deal effectively with the resources and problems of contemporary life, so far as his stage of development permits; and the course of study and syllabi are defective because they do not provide satisfactorily for this subject matter. On the contrary, they emphasize the formal aspects of knowledge rather than its living elements.

That teaching is most effective which develops habits of initiative, self-reliance, constructive imagination, judgment, and reasoning on the part of the pupils—habits essential to efficient thought and action. The teaching in the schools is defective, in general, because it does not aim at and fails to secure these fundamental mental habits and the corresponding conduct on the part of the pupils.

Supervision by principals and superintendents is most effective when it conspicuously helps to secure the course of study and the method just described. Since neither course of study nor teaching is good, the supervision is not good; it shows, rather, the lack of educational leadership; and this judgment was further confirmed by conferences with the teachers and inspection of the work of the supervisory officers.

For the improvement of the work of the elementary schools, we suggest, first, certain minor but important changes in the course of study such as the elimination of technical grammar as a separate study;



a thoroughgoing revision of the course in nature study and natural science; the elimination of English history as a separate study, restricting it to those topics that are necessary for the proper understanding of United States history, to be taught in connection with United States history; the elimination of a considerable part of the present course in arithmetic, restricting it during the first six years to securing accuracy and reasonable facility in the fundamental operations—addition, subtraction, multiplication, and division of whole numbers and simple fractions, both common and decimal, together with percentage and its simplest applications to interest and trade discount; and the reduction during the last two years of the time devoted to arithmetic to not more than three forty-minute periods per week; and during those two years, chiefly, except as individuals may require additional instruction in the fundamentals, to applications of arithmetic in geography, history, nature study, manual training, and other subjects; and, further, an extensive rearrangement of the subject matter of the course of study to establish a fuller correlation among studies, in the interest of unification of the pupils' acquisitions; and particularly a thoroughgoing revision of the work of the seventh and eighth years.

On this last point I desire to make a recommendation with which some of my associates may differ. It is this: Whether the thoroughgoing recommendation for flexibility in the course of study recommended below is adopted or not, it seems to me important that greatly increased flexibility in subject matter and administration should characterize the instruction of the last two elementary school years, in harmony with the varying future careers of the pupils. Some of the pupils are going on to the high schools, some are going into industry or commerce or home life as soon as they are freed from school by the compulsory attendance law. Many of the pupils in these years are over age and have no interest in the usual "academic" work beyond reaching the standard that will set them free. In any case a single uniform course of study for these pupils is not satisfactory in view of their different purposes. I suggest, therefore, that in a few schools, at least, the experiment be thoroughly tried and appraised long enough to really determine its value or the reverse, of a differentiated course of study; one for pupils going on to the high schools, rich in the usual academic studies (including a modern language, if well taught); one for pupils going into industry, rich in the right kind of manual training, and in the domestic arts for girls; and a third for boys and girls going into stores or other commercial shops, rich in elementary instruction in commercial subjects. While no one of these differentiated courses should neglect the subjects emphasized by the others, the dominant subject matter should be clearly evident to parents and pupils alike. Such differentiated courses are already established in a near-by state, and are decidedly promising in ministering to social and individual needs, not only holding pupils in school, but giving them something of real value

to them while they remain. There is every reason to believe that such courses might prove to be equally advantageous in New York City. This recommendation applies with special force to the intermediate school, to be discussed later.

Over and above the foregoing suggestions for the improvement of the course of study in certain details is the following—which, however, covers those already made; namely, the adjustment of the entire course of study to individual and local needs throughout the city. The differences in respect to individual and local needs in the hundreds of elementary schools in New York City with its heterogeneous population are very great, and they are not now satisfactorily taken into the account.

A single uniform course of study prevails throughout the city. True, it is claimed by the City Superintendent that the liberty of principals to adapt and modify the course of study to local and individual needs is “practically infinite”; but justly or unjustly, that is not the view of their responsibilities held by great numbers, perhaps the majority, of the principals. They point out that they are bound by the syllabi; and that means uniformity. Conspicuous lack of adaptation of subject matter and method to social and individual needs therefore abounds, with corresponding lack of satisfactory achievement. We, accordingly, suggest that great relief and improvement would follow the gradual adoption of different courses of study and syllabi for schools in different parts of the city—these courses to be worked out by the principals and teachers, aided by the best of their superior officers; and that these courses be tried long enough to show their value or otherwise. (It is conceivable that each school in the city might advantageously have an appropriate course of study, differing, to some extent at least, from every other.) This would bring professional insight, life, and enthusiasm into the schools, where now there is passive or restive conformity to what is undoubtedly regarded justly or unjustly as a prescribed routine, with its deadening effect on pupils and teachers. The present conditions point to an enormous loss of educational opportunity, to say nothing of money. We urgently recommend that this plan be seriously considered, and, if possible, acted on without delay.

It will be urged, of course, that, because of the great number of pupils and the shifting of the school population, uniformity is necessary for satisfactory administration; but the schools exist for the children, not for the system. If the proposed plan is wise, and if it commends itself to those whose business it is to administer it, the way to carry it into effective execution, though much more difficult than the present administration of a uniform course of study, will be found. The great importance of securing suitable flexibility in elementary education, instead of what is now largely an attempt at rigid uniformity, with its deadening effect on teachers and its failure to educate the pupils (by the standards we have applied, at least) justifies the most serious study

of our recommendation, however fantastic it may seem to some persons—and, in our opinion, the adoption of it for thorough trial after such consideration. If its adoption seems to be impossible, then some other effective plan to accomplish the same end should be found without delay.

Improvements in the course of study would naturally be accompanied by corresponding improvements in such syllabi as would still be found necessary. When teachers and principals themselves make the course of study and syllabi, as they should, all but the poorest teachers are imbued with the spirit embodied in them, and their methods will be in harmony with this spirit and their conscious aims.

For the unsatisfactory supervision by the principals the principals themselves are not wholly responsible. Purely administrative duties, owing to the great size of many of the schools, leave the principals without time for supervision; little real authority is possessed by the principals in regard to the course of study or methods; a widespread tendency to regard the district superintendents rather than the principals as the actual heads of the school; the absence of authorized means of securing prompt and well-considered replies to recommendations submitted by the principals to their superior officers; the required frequency of the rating of teachers, and the method employed in rating them—all these seriously hamper or prevent able principals from giving their teachers helpful supervision. For these conditions unfavorable to satisfactory supervision the principals are responsible only in so far as they acquiesce in them. That is true also, finally, of another reason for the unsatisfactory supervision by the principals, namely, the absence of a clearly conceived theory of supervision—its aims and methods.

These conditions can be improved if initiative be encouraged among principals, and their coöperation under the leadership of their superior officers be systematically promoted. Such initiative and coöperation would undoubtedly also check the further establishment of enormous elementary schools—schools having upward of a hundred teachers—it would tend to place on the principal the authority he requires for the proper supervision as well as administration of his school; it would provide for a recognized channel of communication from the principals individually and collectively to their superior officers, and would keep this channel open and in use; it would tend to improve the basis and the method of rating teachers, and so make possible a reduction in the frequency of this rating, with an increase in its value; and it would develop a conception of really helpful supervision of inestimable value to the progressive efficiency of the schools.

Supervision by district superintendents is discussed later, in connection with the general system of supervision.

It is impossible to discuss here many details treated in the report.

But two such details, at least, must be referred to, because of their immediate vital importance.

A serious administrative problem is presented by persistently unruly children. This problem deserves careful and immediate attention because of the harmful effect of such children on the classes and schools where they are found. The character of some of the pupils in many schools necessitates a change of policy in the city in relation to corporal punishment. It is not now permitted, but is nevertheless practiced. It cannot be avoided. It is the inevitable result of persistent harassing of teachers and principals by unruly and defiant pupils. Such pupils can only be restrained by force from a downward career for themselves, and from exerting a baneful influence on the welfare of their classmates and even entire schools. It is manifestly unwise, however, to have punishment administered in violation of the regulations. Our study of the existing conditions induces us to recommend, (1) That the by-laws of the Board of Education expressly forbidding corporal punishment be rescinded; that the number of parental schools and disciplinary schools be increased; that the mode of commitment to these schools be greatly simplified; and that corporal punishment be allowed in them; (2) That in other schools when it is deemed advisable by the principal, one class or more, composed of persistently troublesome children, shall be formed, after the type of the present ungraded classes; and that in these special classes corporal punishment be allowed under certain restrictions set forth in the report. The mere knowledge on the part of unruly children that they may be subject to corporal punishment will often make such punishment unnecessary. The arrangement here recommended will, we believe, reduce the number of cases of corporal punishment to the inevitable minimum, and will greatly benefit all concerned.

Important as vocational guidance is, hardly a beginning of systematic endeavor in that direction in the hundreds of schools throughout the city has yet been made. What is most needed is organized effort toward equipping selected teachers so that they can serve as leaders in the difficult task of utilizing such resources as are now available for the actual work of vocational guidance; and in adding to those resources. It may not be out of place here to emphasize once more the fact that vocational guidance does *not* mean merely helping boys and girls to find work, but to find *the kind of work they are best fitted by nature and training to do well*. It does *not* mean prescribing a vocation; it *does* mean bringing to bear on the choice of a vocation organized information and organized common sense. It should therefore not only tend to bring about a better adjustment of the boy to his work, but also point the way to more education for more efficient work.

From the foregoing adverse judgment on the quality of the instruction in the elementary schools, the kindergartens are expressly excluded. The kindergartens are plainly fulfilling their purpose reasonably well.

## (2) Ungraded Classes

The magnitude and seriousness of the problem of caring for mentally defective children will be appreciated when the city realizes that the number of such children in the public schools is not less than 15,000, while there are only about 2,000 in present ungraded classes; that the presence of such children in classes for normal children seriously handicaps both teachers and pupils; that the means of discovering defective children and segregating them and caring for them, so far as they are segregated, are at present inadequate and defective; and, finally, that the danger of allowing such children to grow up at large is very great. Such persons not only become a burden to society themselves, but propagate their kind in large numbers by marriage or illegitimate unions with each other or with normal individuals.

We have not discussed the question whether these unfortunates should be discovered and cared for by some other agency than the public school system, say the Board of Health, but the question is deserving of serious consideration. The question is, of course, whether the problem is principally medical or educational. Up to the present time, the public school system has been charged with caring for defective children. The report accordingly deals with the way in which the schools are carrying this responsibility, and offers suggestions for future procedure.

Nearly all of the ungraded classes were visited. Much is being done, but much more must be done in the interest of the normal children and of society at large, as well as of the defective children themselves. The entire treatment of defective children is at present inadequate, owing to inadequacy of the means and methods of recognizing mental defectives, particularly the high-grade type; and there is great waste of time and effort in the present ungraded classes, owing to the attempt to teach defective children reading, writing, and arithmetic, which they will never learn well enough to use, instead of vocationalized manual training and other forms of industrial work; and many of the children are not getting what they might get because of lack of proper classroom equipment and materials. All this is largely due to the lack of adequate organization, administration, and supervision for the proper discovery and treatment of defective children, together with the lack of trained teachers.

We accordingly recommend a radical enlargement and extension of the work of the ungraded classes—a Superintendent of Schools and Classes for Defectives; at least four additional associate inspectors; five examiners (psychologists and physicians) to discover and classify defective children; the segregation of the ungraded classes in special schools as fast as possible; the prompt and adequate equipment of the ungraded classes with the appropriate materials for instruction; the establishment as rapidly as possible of the right kind of training schools

for teachers of defectives, the amendment of the child labor law so that defective children may go to work as soon as it is clear that they would be more profitably employed at work than in school—provided such children cannot be placed in an institution or colony for permanent segregation; a substantial increase in the bonus now paid to teachers of defectives who show growth in efficiency; and especially we recommend *a*: the appointment at once of a number of special assistants whose business it shall be to follow up the history of defective children after they have passed through the schools, in order that the facts of their lives may throw light on their satisfactory care and treatment; whether these should be educational, medical, or custodial, or all three combined; for their own welfare and the welfare of society; and *b*: adequate, i. e., greatly increased expenditures. The cost of carrying out these recommendations will be much greater than the present expenditure. But, *whatever it costs*, the city cannot safely perpetuate the present inadequate measures of discovering and caring for its mentally defective children, and run the further risk of allowing the present progressive increase of mental defectives to continue unchecked.

### ✓ (3) The Courtis Tests in Arithmetic

Education is seeking a scientific basis. We are aiming to substitute established educational facts and verified conclusions based on them for individual opinion, no matter how authoritative. The foundation of all science is accurate measurement of the facts with which it deals. It will be some time, however, before we have such a firm basis for the science of education—for educational theory and practice. Meanwhile a number of promising beginnings have been made, and some of them have passed beyond the stage of beginnings. Among these are the Courtis Tests in Arithmetic. These tests represent the most successful attempt at scientific measurement in education known to me. Moreover, they have been developed by Mr. Courtis through several years of investigation over a wide area in this country and abroad.

It seemed important that we should apply this illustration of the scientific method of investigating and appraising educational results in at least one important field of work. I therefore gladly availed myself of the opportunity to secure Mr. Courtis himself to direct the application of his tests in New York City.<sup>1</sup> I wished to show how such or similar studies should be incorporated in the regular work of the school system in the interest of the education of the children, the teachers, supervising officers, and the general public. For they point the way to real progress in education. Such studies in every field of work are imperatively needed. They would show how unsafe complacent or at least tacit acquiescence in our present generally unsatisfactory basis—mere educational authority based on general opinion and personal ex-

<sup>1</sup> Mr. Courtis received no salary. He was satisfied with his expenses.

perience—is. And they would furnish a guide to practice, the validity of which neither teacher nor layman could disregard. It is because the Curtis tests show this for fundamentals in arithmetic—one of the most important studies—and at the same time show what the present arithmetical achievement of the schools in those fundamentals is, and because they furnish important suggestions for future procedure in teaching and supervision, that we have used them.

The central idea of the Curtis tests is that *the same test* is applied *under the same conditions* in every grade; and that growth in ability in the fundamentals tested is shown in increased accuracy and speed in the work done. The tests were applied to 33,350 children—approximately one-tenth of the pupils in the grades 4A to 8B in schools selected at random, but widely distributed throughout the city. As a whole, the results show great inefficiency in both accuracy and speed in computation, and in simple reasoning; and they show, further, that children of *every level of ability* (the average score for a grade) *are found in every grade*; and that *differences between individuals greatly exceeded differences between grades*. Such results, it should be noted, are not peculiar to New York City; they have been found wherever the Curtis tests have been applied. Compared with children in other cities, New York City children are slightly better in speed, but correspondingly worse in accuracy, and very poor in reasoning.

These conditions are not due to lack of effort on the part of the teachers, but to the neglect of a basic factor in education—adaptation of the work to individual differences. We accordingly recommend that present methods be so modified as to base the work in fundamentals, at least, on the measured individual needs of the pupils; that standard tests and standard achievements be adopted to increase definiteness of aims in teaching the fundamentals of arithmetic; that investigations be undertaken to determine the effect of all the factors that determine ability, and condition mental growth; that the effectiveness of various methods of work be tested by certain scientifically controlled experiments; and, finally, that the Bureau of Investigation and Appraisal<sup>1</sup> recommended below organize and control these investigations and experiments.

#### (4), (5), (6), (7) **Certain Problems in the Administration of the Elementary Schools**

Four important problems in the administration of elementary schools were included in our investigations at the suggestion of President Mitchel, namely: The advantages or disadvantages of Intermediate Schools; Estimating the Need of Elementary School Teachers for Educational (general administrative) and for Budget Purposes; Promotions, Non-Promotions, and Part-Time; and the Efficiency of the Com-

<sup>1</sup>See page 185.

pulsory Attendance Service. Our study of these problems, besides aiming to secure the information sought so far as that was possible with the time and staff at our disposal, is also intended to show how organized educational statistics may be used to promote the progressive solution of administrative problems.

#### (4) Intermediate Schools

Intermediate Schools in New York City are schools in which seventh and eighth-year pupils (grades 7A to 8B) are segregated. There are three such schools—all in Manhattan. They were organized to relieve congestion—two of them in 1905, and one in 1907; and, although they at once proved their value for this purpose, none has been organized since. Meanwhile, congestion throughout the city has greatly increased. In spite of the service rendered by the intermediate schools, their value has been seriously questioned. Accordingly, we have studied them from three points of view: Their educational efficiency as measured by their power to hold pupils in school compared with schools having all grades, and the relative progress of pupils in the two kinds of schools; the relative cost of the two kinds of schools; and the peculiar opportunities the intermediate schools offer to adapt instruction and management to the varying needs of the pupils.

In this comparative study we have used data collected from the three intermediate schools and certain neighboring or contributing schools. In the time at our disposal it was possible for us to collect and use only data pertaining to the February-June term, 1911; hence our conclusions cannot be regarded as final. Such study, however, illustrates the method which would yield approximately final conclusions if applied to the data for a number of years.

Our study of the data used leads to the following provisional conclusions: Fewer pupils leave the 6B classes in schools having only 1A to 6B grades by .43 of 1 per cent. than leave the 6B classes in schools having all grades; fewer pupils leave the seventh and eighth-year classes of intermediate schools by 1.75 per cent. than leave the seventh and eighth-year classes of schools having all grades; more seventh and eighth-year pupils are promoted in intermediate schools by 2.04 per cent. than are promoted in schools having all grades; thirteen times as many terms of work are lost by seventh and eighth-year pupils in schools having all grades as in intermediate schools. On the other hand, more 6B promoted pupils by .67 of 1 per cent. fail to enter the 7A grade of intermediate schools than when they can enter that grade in their home schools. Thus, on all the counts save the last, the intermediate schools show distinct superiority over the schools having all grades; and on this last count the difference is slight.

The difference in cost between the two kinds of schools depends almost entirely on the three following items: the number of school



rooms, the number of teachers, and the equipment and supplies needed for instruction of a given number of 7A-8B pupils. Comparing the intermediate schools with schools having all grades, employing substantially the same schools as before, in respect to these three items, we find: that 5.31 per cent. fewer classrooms; 27.31 per cent. fewer shops (or 19.53 per cent., if the shops are used also by other than 7A-8B pupils); 17.17 per cent. fewer cooking rooms (or 6.3 per cent., if the cooking rooms are used also by other than 7A-8B pupils); 18.16 per cent. fewer gymnasiums are required to instruct a given number of 7A-8B pupils in the intermediate schools than in schools having all grades. Combining these results, it appears that the intermediate schools require fewer rooms for the instruction of a given number of pupils by 8.11 per cent. or at least 6.88 per cent. Using these differences and the actual number of rooms used to instruct a given number of 7A-8B pupils in schools having all grades, it appears that, if 20,000 7A-8B pupils could be segregated in intermediate schools, the difference in cost of regular classrooms, shops, and gymnasiums would be not less than \$100,000, together with an annual difference in favor of intermediate schools of 6.88 per cent. in upkeep and operating expenses.

We find also that 5.13 per cent. fewer regular class teachers, 8.07 per cent. fewer manual training teachers, and 8.07 per cent. fewer cooking teachers—the three kinds of teachers employed—are required to instruct a given number of pupils in intermediate schools than in schools having all grades. Combining these results, we find that the intermediate schools require fewer teachers than schools having all grades by 5.36 per cent. As before, this difference represents a difference in annual cost of not less than \$35,000 in favor of intermediate schools.

It is evident that, although there would be no difference in the amount of supplies used which are directly consumed by the pupils (such as pens, paper, pencils, ink) in intermediate schools and in schools having all grades, there would be a saving in equipment of a more or less permanent sort (maps, globes, scientific apparatus, gymnasium, cooking room and shop equipment) in intermediate schools, because fewer classrooms, shops, cooking rooms, and gymnasiums are required. Data for the amount spent for this equipment were not available to us; but it is clear that the amount would be a considerable sum.

The foregoing considerations pertain only to the intermediate schools as now organized and conducted. Such schools offer, however, excellent opportunities to render a service far beyond their present usefulness. They afford, as already said, an unusually good opportunity to adapt instruction during the last two years of the elementary school to individual and social needs through differentiated courses of study. The pupils of an intermediate school have reached the age when they are passing through the stage of later childhood and early youth. The physical and mental changes of early adolescence, and the dawning interest in social responsibilities, demand much more careful considera-

tion than they usually receive. The segregation of such pupils in a separate school brings all the special problems of their education into prominence. Consequently the teachers of such schools may, under wise guidance, develop peculiar skill in dealing with them. Such problems are the appropriate differentiation of courses of study to meet individual and local needs; segregation of the sexes, with appropriate modification of teaching and management for each sex; grouping the pupils in accordance with varying abilities, health, industry, ambitions, and home conditions; articulation of the different courses of study, with high schools and with vocational schools; vocational guidance; organizations of pupils for self-government, athletics, club work, social activities; in general, problems connected with the larger freedom appropriate to the age of the pupils, through which they may exercise and develop the insight and self-direction that will make school life real—that part of their lives that makes all the rest of their lives now and later more significant and valuable.

Accordingly, we recommend that immediate studies be made of localities where conditions seem favorable to the establishment of intermediate schools, and that such schools be established where conditions are found to be favorable; that when established such schools be so planned and conducted as not only to serve their present purpose, but also to aim at the fuller realization of the educational opportunities they may afford as outlined in the report; that pains be taken to maintain coöperating relations between contributing schools and intermediate schools on the one hand, and effective articulation between intermediate schools and high schools and vocational schools on the other; that the peculiar opportunity to develop systematic vocational guidance be fully utilized; and, finally, that the Bureau of Investigation and Appraisal<sup>1</sup> be charged with the duty of making the investigations concerning the establishment of intermediate schools, and of their efficiency and economy when established.

### **(5) Promotions, Non-Promotions, and Part-Time**

Prior to the commencement of our work, President Mitchel had asked Superintendent Maxwell to furnish certain data concerning promotion, non-promotion, and part-time, with a view to determining whether the alleged causes of non-promotion reported by the City Superintendent were real causes; to what extent part-time was responsible for non-promotion; and whether part-time was otherwise an evil. When our work began, the data President Mitchel had asked for were not yet collected; and we were asked to go on with the investigation. Our first task, therefore, was to plan the collecting and tabulating of the desired data covered by fourteen questions pertaining to each child in the

<sup>1</sup> See page 185.

elementary schools of the entire city.<sup>1</sup> The tables prepared by Superintendent Maxwell calling for the desired data to be supplied by the principal of each school were sent out as revised by us as soon as possible, and were returned to us, filled as requested, about July 10, 1911. Then followed the further task of tabulating this huge mass of data, which, with our clerical staff, required several months; and finally the interpretation of the data as collected, which again required several months of labor by the one associate who had been assigned to this statistical work in addition to other work. Long before this work was finished, it was clear that the data collected would not furnish conclusive answers to the questions President Mitchel had raised, and in our report we have expressly asserted this fact. Nevertheless the data collected do supply valuable information never before collected, some of which has been utilized by us in defining and suggesting other important problems. Some of this material will be considered in this summary.

It is obviously undesirable to reproduce here any of the statistical details on which our findings and recommendations are based. For such details the reader is referred to the report itself. We found that in all the boroughs the rate of promotion was lowest in the 1A grade, ranging from 75.37 to 76.97 per cent.; and highest in the 8B grade, ranging from 93.71 to 97.25 per cent. In the remaining grades the rate of promotion ranged from about 88 to about 91 per cent. The problem of increasing the rate of promotion in the 1A grade is primarily a question of getting the pupils into school at the beginning of the term and keeping them there.

In spite of the approximate uniformity in the rate of promotion throughout the city, there is evidence that, on the whole, promotions were made with discretion and not on a merely mechanical or numerical basis. Nevertheless there was a decided increase in the rate of promotion over preceding terms—amounting to 4.56 per cent. in a single year. This increase was probably due, in part, to pressure by the City Superintendent “to secure more generous promotions,” although he took pains to impress on principals and teachers that pupils should not be promoted who are unfit to do the work of the next higher grade. The City Superintendent was justified in his endeavor to increase the rate of promotion because it is desirable to make the standard of promotion such that pupils in large numbers can enjoy the advantages of the upper grades. (These grades emphasize literature, history, geography, and other studies and activities pertaining to “life,” while the earlier grades necessarily emphasize the school arts.) Such standards should, however, be explicitly described and authorized, not merely implicitly recognized and therefore vaguely approved.

Conditions favorable to a maximum rate of promotion have not been studied and provided for. Such conditions must be based on investiga-

<sup>1</sup> The investigation was, however, restricted by us to children in regular classes and to promotions at the end of the February-June term, 1911.

tions over a sufficient length of time and should include the best age of entrance to the elementary school; the age at which children need a régime of instruction and management different from that appropriate to the elementary school; the number of normal children entering on and completing the present course of study; the actual time required by children to complete the present course of study with the standards now approved, together with a clear and adequate statement of what these standards are; the actual length of time normal children remain in school, including their attendance on schools, in other places, and the length of their attendance between the ages of six and fourteen years; what groups of children of varying abilities and needs requiring different courses of study should be formed. And we recommend that there be as many different courses in each school as there are groups of such children; that the actual total length of such courses as revealed by investigation and the standards adhered to be such that each normal child in regular attendance can complete one of these courses between the ages of six and fourteen.

As promotions were made in the February-June term of 1911, over-size classes, i. e., classes having more than 50 pupils, contributed but slightly, if at all, to non-promotion, i. e., to congestion. This statement does not mean, however, that educational opportunity and achievement were as good in classes over 50 as in classes under 50. We recommend that special investigations be made into the educational efficiency of classes of varying sizes—i. e., *how much* less efficient over-size classes are than smaller classes.

Absence is a very large factor in increasing the number of non-promotions and hence in increasing congestion. The corresponding responsibility of all concerned to get children into school and to keep them there is therefore clear.

Over-age of children, i. e., the length of time children are behind the grades they ought to be in as determined by the accepted age-grade standards, is an important factor in increasing the number of non-promotions, and hence congestion.

The presence of pupils unable to use the English language does not materially affect the rate of promotion of a class as a whole, because of the relatively small number of such pupils in a class; but the progress of such pupils is decidedly less than that of the other pupils, particularly in the 1A grade.

A conclusive answer to the question whether part-time is an evil in all grades, or only above the 1B grade, would require investigations exceeding the limits of time and means at our command. Such investigations should measure, among other things, the effect of part-time as compared with whole time on the health and physical development of the children; the comparative achievements of the children in the two kinds of classes; and should study the differences in the interests, habits, and conduct, in school and out, of the children in the two kinds of classes.

Our data enabled us to deal with only one phase of the educational aspect of the problem, namely, the rate of promotion in the two kinds of classes. We found that in the twelve grades in which there were both whole-time and part-time classes (part-time was practically confined to the grades 1A to 5B inclusive), the rate of promotion in whole-time classes was higher than in part-time classes in nine grades and lower in three (4A, 4B, and 6B). This lower rate, it should be noted, is most significant in the lower grades, because 88.84 per cent. of all part-time pupils are in the 1A to 3B grades, and it is precisely in those grades that part-time has been supposed to have least effect on the progress of the pupils. There is no reason to suppose that the lower rate of promotion in the 1A to 3B grades in part-time classes is indicative of higher standards than in the whole-time classes; on the contrary, part-time means congestion, and congestion of itself tends to forced promotions, i. e., to a higher rate than in whole-time classes. We found also that, although the rate of promotion was lower in part-time classes taken together than in whole-time classes, the *direct effect* of part-time on promotions was small, because of the relatively small number of non-promotions among the total number of part-time pupils. We could not inquire into certain possible indirect effects such as indifference to school work, bad conduct, and truancy, which deserve careful investigation. We found also that part-time was a very small factor in promoting congestion, if its influence was felt at all.

Considering the rate of promotion in the different kinds of part-time classes, we found: that the rate of promotion was higher in Ettinger part-time classes than in the others, and that, on the whole, more pupils were promoted in these part-time classes than in whole-time classes. This last fact should not be taken to mean, however, that Ettinger part-time classes are educationally superior to whole-time classes; for a higher rate of promotion is not alone sufficient evidence of such superiority.

Summarizing our findings, based on the available data—the data for the February-June term of 1911 only—we find that, considering each of the alleged causes of non-promotion separately, part-time and over-size of classes are responsible for relatively few non-promotions; that irregular attendance is a decided factor in increasing the number of non-promotions; that late entrance to school and sluggish mentality as expressed in retardation are material factors in causing non-promotion; that inability to use the English language increases decidedly the number of non-promotions in the relatively small number of pupils affected.

In view of the slightly lower rate of promotion for over-size classes, but more particularly because of the acknowledged educational disadvantages of such classes, the strong disapproval of part-time classes by the general public, and the prevailing practice in other cities, we recommend: that all classes having more than 50 pupils should be reduced to classes of 45 pupils; and that all part-time classes be eliminated. In

view of the decidedly lower rate of promotion of retarded pupils, and for pupils unable to use the English language, we recommend: that classes in which special attention shall be given to retarded pupils be provided at least for all pupils two years and more behind their grades; that the course of study be specially modified for such pupils; and that classes for the special instruction of pupils unable to use the English language be provided, at least, for all such pupils in grade 1A.

To carry these recommendations into effect would require a very large sum of money. Judging by the conditions existing in the February-June term, 1911, we estimate that not less than \$13,750,000 would be required for new buildings, together with an annual expenditure of probably \$270,000 for upkeep and maintenance, and an annual expenditure for teachers' salaries of not less than \$496,000.

Widespread dissatisfaction within and without the school system, with part-time as an expedient for relieving congestion, is, however, steadily exerting pressure on the Board of Estimate for appropriations sufficient to build the school buildings required. Although, as was said above, the time and means at our disposal could not enable us to ascertain whether part-time is an evil, we share the view widely held that every American school child is entitled to a full day's schooling, under the most favorable conditions that can be provided for his present and future welfare; and since further delay will merely make present conditions worse, we recommend that, although the cost of such schooling for the vast number of children in New York is very large, the city begin at once to appropriate the necessary funds.

One important item of information collected by us is the number of children who leave school without completing the course. We found that, during the February-June term of 1911, 30,995 pupils in regular classes left school. Of these, 18,134 were either subject to the compulsory attendance law or were under seven years of age, hence they will probably return to school; 12,861 doubtless left school permanently. These are large numbers. Moreover, there is no reason to believe that the number leaving in the term under consideration is exceptional, and the causes of pupils leaving should be thoroughly investigated. We accordingly recommend, as a preliminary step in the reduction of school losses, that the reports from the several schools on pupils leaving and the reasons therefor be collected and tabulated, term by term, for the city, so that these losses may be known and faced; and the causes therefor may be eradicated so far as they are found to lie within the schools.

#### **(6) Estimating for Budget Purposes the Number of Teachers Needed in Elementary Schools.<sup>1</sup>**

##### **(7) The Compulsory Attendance Service**

The organization and work of the compulsory attendance service have been severely criticized since 1908, when the Associate Superin-

<sup>1</sup> The report on this topic could not be ready in time to be included in this report.

tendent in charge of the service stated in his report that the "method of doing the work was grossly defective"; that "systematic and effective work is lacking"; and that "the results produced are not commensurate with the amount expended." Through the specialist who had been assigned by me to investigate and report on the compulsory attendance service, we made a preliminary report to your committee in October, 1911. The facts presented at that time, though admittedly incomplete, were important. These facts and others were from time to time submitted to the Associate Superintendent in charge of the compulsory attendance service, together with suggestions for the reorganization of the service. These facts and accompanying criticisms and constructive suggestions were utilized by the Associate Superintendent in formulating a plan of reorganization. This plan, with modifications, was accepted by the Committee on Special Schools, and later, on April 24, 1912, by the Board of Education.

Meanwhile, in his report for 1911, City Superintendent Maxwell recommended a sweeping change in the organization of the Compulsory Attendance Department, namely, that it should be removed from the special direction of the City Superintendent, that it should be placed under the general direction of the Permanent Census Board, and that it should be administered (subject to the general direction of that board) by the secretary of the Permanent Census Board. On the other hand, the reorganization adopted by the Board of Education proposed definite changes in methods of testing the efficiency of attendance officers and of inspecting their work.

Our original plan was to investigate the present organization and procedure of the compulsory attendance service, in order to ascertain where, if at all, inadequacy of results was due to organization and methods and to make suggestions for improvement. The action of the Board of Education referred to above makes the presentation of the details originally intended unnecessary, inasmuch as the proposed reorganization is an acknowledgment of defective organization and procedure. Accordingly, the purpose of such details as the report gives concerning present organization, methods, and results is primarily to support and facilitate the plan based, in part, on our facts and suggestions, and adopted by the Board of Education on April 24, 1912—the plan to which the school system is now committed.

We are in entire agreement with the proposal of the City Superintendent of Schools that the functions of the compulsory attendance service and of the Permanent Census Board be united in a single organization. We are convinced, however, that this organization should be responsible to the Board of Education and not to the Permanent Census Board—an independent organization. The investigation of causes of irregularity of attendance, delinquency, and unsatisfactory progress of school children; preventive treatment for minimizing or removing these causes; and disciplinary treatment for the application and enforcement

of remedial measures, are integral and indispensable elements of educational administration. Hence such functions should not be isolated, or removed from the control of the Board of Education—the authority responsible for educational administration as a whole.

One important aspect of a satisfactory compulsory attendance service deserves special attention. The service, at present, limits itself unduly to the performance of police functions, aiming chiefly at the immediate explanation and checking of truancy and irregularity; rather than at the *prevention* of truancy and irregularity by attempting to discover and control their causes. Such control of truancy by police methods alone is quite inadequate and often inappropriate. The harmful effect of irregularity of attendance on the education of children was pointed out above in the discussions of promotions and non-promotions. The evil effect of irregularity and truancy on character and conduct during and outside of school hours is obvious. The prevention of irregularity and truancy by striking at their causes is therefore even more important than the attempt to cure them.

We accordingly recommend a reorganization of the compulsory attendance service and an enlargement of its program so as to include preventive as well as corrective and disciplinary treatment; and accompanying this reorganization, first, a complete revision of the system of records and reports as suggested in the report, so as to provide an adequate basis, now lacking, for administrative judgment and control; and, second, a standardization of all routine functions.

To effect this reorganization and change of methods, we recommend further that an Attendance Bureau, responsible to the Board of Education, be constituted, and that this bureau have charge of all functions now discharged by the compulsory attendance service; the Permanent Census Board; Public School No. 120, Manhattan; and the corps of visiting teachers now supported by the Public Education Association, or to be appointed by the Board of Education, if any; that administrative control of this bureau be completely vested in a chief responsible directly to the Superintendent of Schools; and that a district supervisor, directly responsible to the bureau chief, be appointed for each of the twenty-three districts into which the city is now divided; that district superintendents be relieved of all responsibility for the administration of the compulsory attendance service, except the conducting of judicial hearings in cases brought before them by supervising attendance officers; and that the staff of the bureau, in view of the functions to be discharged, be organized as follows:

A Division of Enumeration and Investigation—to maintain a correctly revised census list of all children of school age, and to make preliminary investigation of all cases referred to the Attendance Bureau, and report thereon.

A Division of Prevention and Probation—to make more exhaustive investigation of cases not disposed of through the first division—to ascer-



tain the causes of irregularity, and on the basis of a diagnosis of each case to suggest a plan of treatment which may require the coöperation of the parents, the teachers, and various voluntary agencies; and to act as probation officers.

A Division of Discipline and Prosecution—to deal with cases which have not yielded to the methods of the division of prevention and probation, and in which coercion may be necessary; and to prepare and prosecute all cases against parents and children for violation of compulsory attendance laws.

A Division of Correction—to maintain a day detention school in each of the twenty-three attendance districts, and the parental school or schools for the custodial care of children who cannot be satisfactorily dealt with in the day detention schools.

## II. WHAT KINDS OF VOCATIONAL (INDUSTRIAL) SCHOOLS ARE NEEDED?

While the City of New York makes comprehensive provision for general elementary education, its provision of only two elementary vocational schools—the Boys' Vocational School and the Manhattan Trade School for Girls—is so meager, in view of what is needed, as to be almost negligible. Hence the report deals only incidentally with these two schools, and concerns itself especially with the problem of what kinds of industrial schools are needed.<sup>1</sup>

The Boys' Vocational School in Manhattan is not a trade school—it does not claim to send out an artisan. It does endeavor to lay a good foundation for a real industrial apprenticeship in a commercial shop. It gives the boy some manual dexterity and industrial insight, on the basis of which he may make a wiser choice of a trade than he could otherwise; and increases his immediate earnings on going to work, and his prospects for the future. The number of pupils in average daily attendance in 1911-12 was 266, an insignificant number in view of the thousands of boys who leave the elementary schools every year, either with or without graduating, to go to work. This kind of school is good, so far as it goes. But if additional schools of this kind are established, they would serve their purpose better if the industrial scope of their work were extended, and made less intensive. Too much stress is now laid on manual skill in a particular trade or branch of a trade, to provide adequate opportunity for satisfactory vocational guidance, based on a sufficient acquaintance with industrial occupations.

The Manhattan Trade School for Girls aims to train girls so that they become skilled workwomen in a shorter time and in a larger and more intelligent way than is possible in the trades themselves. It is not

<sup>1</sup> Secondary schools for vocational education (vocational high schools) are discussed later.

a trade school. It does not train artisans. It does aim, through the variety of its occupations (and in this respect it is superior to the Boys' Vocational School), to start girls successfully in industrial life; and particularly to get them beyond the "blind alley" jobs at about \$3 a week to apprenticeships at about \$5 a week. The number of pupils in 1911 (average daily attendance) was 360—again an insignificant proportion of the thousands of children (girls) who go to work at an early age. So far as it goes, however, this school is well planned to meet the needs of those girls.

One serious difficulty in the development of the school is lack of freedom in the selection of teachers for the distinctly vocational work. Directors of vocational schools should therefore be given power to determine the fitness of such teachers in whatever ways seem best. The usual examinations will determine neither the fitness nor the unfitness of such teachers.

Both the schools are prevocational schools; they are attended by those pupils only who can afford to go to a day school after they are fourteen years old. Such schools are therefore selective in their educational influence, reaching only a limited number of those who need vocational education. For this reason, this type of school alone could never offer an adequate solution of the problem of vocational education, valuable as it is—particularly the girls' school—for those pupils whom it does reach.

We heartily indorse the City Superintendent's recommendation for the establishment of additional vocational schools. The important question is, however, What *kinds* of vocational schools? The city needs a well-founded, clearly conceived policy of industrial education. Having such a policy, schools planned to meet the city's real needs could be safely established as rapidly as possible. Then, if the efficiency of these schools is carefully studied in relation to the individuals and industries they are intended to serve, a progressively satisfactory scheme of industrial education will result. What, then, should this policy be? A satisfactory policy of industrial education must reach not only a few of that vast majority of young people who now leave school at about fourteen years of age to go to work; it must endeavor to reach them all. Hence it must not only provide prevocational education, but education during the early years of employment.

Fortunately, exposition and argument are no longer required in this country to establish the necessity of suitable training for these young people. The social conscience has been aroused to a recognition of the duty of society to its thousands of untrained workers—workers for the vast majority of whom progressive economic efficiency and corresponding satisfaction with life are impossible; and social need—the imperative need of properly trained, efficient workers in an age of industry, together with the acknowledged increasing difficulty and even impotence of industry to train its own workers—these two, the social conscience

and the social need—are rapidly bringing the American people to recognize their responsibilities to the great army of industrial workers, without whose mental and moral strength and industrial intelligence and skill social stability and progress are impossible.

As indicated above, two aspects of the problem present themselves for consideration, namely, *a.* Education prior to gainful employment; *b.* Education accompanying gainful employment.<sup>1</sup>

*a.* It has been pointed out already that prevocational schools alone could not solve the problem of vocational education because they reach only a few of those who need it. It was further noted that they do not aim to train artisans, i. e., they are not trade schools; and this last point requires further discussion.

Trades (and other occupations) are “energizing” and “enervating.” Enervating occupations are automatic or machine-feeding occupations, in which little or no demand is made on the intelligence of the worker and which afford no opportunity for mental development, and require only or chiefly a certain measure of manual dexterity or skill. This work does not promote the development of character; it is repressive, and makes no demands on self-expression. Energizing occupations, on the other hand, do require the exercise of intelligence as well as manual dexterity or skill, and hence afford an opportunity for mental and moral growth.

In modern industry energizing work is decreasing and enervating work is increasing. We are rapidly organizing the working world into a relatively small staff of mental workers directing a huge army of physical workers, and this condition of industry will continue and even tend to become more marked. The significant thing to note is that under such circumstances the minds of the majority of the population in our self-governing democracy are in danger of becoming less and less capable of carrying their full responsibilities as citizens because they become less and less capable of constructive thought or well-directed effort of any sort while engaged in earning their living.

It is clear that neither public prevocational schools nor public trade schools<sup>2</sup> should train for the enervating occupations with their deadening effect on mental and moral development—and, as a matter of fact, they have never been seriously considered by public school authorities. Public prevocational schools for the energizing occupations, as has been pointed out, cannot alone solve the problem of training artisans. Neither can trade schools, for they would be just as selective in their

<sup>1</sup> Evening schools for “energizing occupations” for persons eighteen years of age and upward are not here meant. The City has efficient schools of this sort and they should be extended. The compulsory evening schools for juvenile workers cannot be efficient; and we heartily indorse the City Superintendent’s recommendation that they be abolished.

<sup>2</sup> By “trade school” is meant a school which in its shops reproduces factory conditions as nearly as possible, and which by full-time attendance of the pupil turns out an artisan competent to enter a trade, or at most with only a very short apprenticeship.

influence, as the prevocational schools, and hence their graduates would monopolize and possibly overstock the energizing occupations. The public schools of all kinds stand for equality of opportunity, and must endeavor to make that equality of opportunity as *accessible* as possible.

Moreover, the ability of public trade schools to turn out efficient artisans is still an open question. But even if they could do this, to be efficient and sufficient in number and variety, they would be enormously expensive. Such schools would not only entail heavy expense for their initial equipment, but they would be subject to the progressive expense of constantly replacing obsolete equipment, just as the factory has to bear that expense. Accordingly, we cannot advocate public trade schools, or prevocational schools alone, as a satisfactory policy of industrial education.

b. The satisfactory solution of the problem is found in education accompanying gainful employment—in *the coöperation of industry and education*. This coöperation offers two distinct solutions of our problem—coöperative or part-time vocational schools and continuation schools. Coöperative schools are based on an agreement between the school system and a group of manufacturers whereby the manufacturers give appropriate shop instruction to groups of apprentices, and the schools the accompanying related theoretical and general instruction. The apprentices receiving this instruction are subdivided so that the two divisions of a group alternate between shop work and school attendance. The apprentices receive the usual apprentice pay for their work. The schools have no practice shops, since the industries themselves provide the shop training required.

Continuation schools are based on an agreement by the employers to release their youthful employees at periods when they can best be spared for a limited time, say a half day or a day altogether per week, for appropriate instruction by the school system.

Either solution implies a recognition of the fact that neither industry alone nor the schools alone can discharge the educational responsibility society must discharge to its young workers, but that both together can and should discharge it, in the interest of industrial and social welfare. Such recognition will hardly require a propaganda, as was pointed out above. But to embody this recognition in actual practice may. Both manufacturers and teachers have regarded such plans as desirable but hopeless because each believed the other would not participate in them. That effective participation is possible, however, is proved by the fact that it is in operation and in successful operation in several cities of the country.

We accordingly recommend that a propaganda be undertaken to bring the school system and the industries together for a thorough study of their common educational problem and for coöperation in the solution of it; that the occupations into which children go as soon as the law permits them to go to work be studied in order that the proper continu-

ation school and coöperative school instruction may be wisely planned; that a comprehensive survey be made showing the number of boys and girls in different occupations, and the nature of these occupations; and that continuation schools for such boys and girls, and to a limited extent, at least, coöperative schools, too, in the energizing occupations be established as soon as possible; that, if necessary or desirable, legislation similar to the Ohio law for the compulsory education of juvenile workers be secured. This law permits, but does not require, the school authorities to establish day continuation schools, but makes attendance on them compulsory when they are established.

In this endeavor the most difficult problem of all is to find the appropriate continuation school instruction for the automatic workers—the workers in the enervating occupations—for it must counteract the influence of the work rather than supplement it. Much patient investigation and experimentation will be necessary before the right instruction is found. But the need of it is imperative, and it is daily becoming more so.

Finally, we recommend that the investigations required to carry this policy of industrial education into effect, and to judge of and maintain its efficiency, be assigned to the Bureau of Investigation and Appraisal already referred to.

### III. HIGH SCHOOLS

A study of the public high schools of the United States enables us to formulate the aim of public secondary education as follows: It should lift the general level of intelligence, character, and efficiency—general and vocational—of those who take advantage of the opportunities it offers. Unlike most secondary education abroad, secondary education in this country is not merely for the well-to-do classes, with incidental opportunities for a few of the most gifted of the less fortunate classes. Our secondary education aims to reach the “masses” as well as the “classes.” It does not recognize social segregations; and, so far as its administration is concerned, it is therefore equally accessible to all.

High school education aims to secure for each pupil an appropriate extension of his acquaintance with the resources and problems of our civilization begun in the elementary school; and at the same time to fix and strengthen his command over them, so far as his capacities and the time limits of his education permit.

To this end, education in this country is free in the high school as well as in the elementary school; and the transition from the elementary school to the high school should be as easy and natural as from grade to grade in the elementary school. Indeed, except for the grouping of pupils in separate buildings for convenience of instruction and manage-

ment, it ought to be impossible to say, in a well-organized school system, for certain courses, at least, where the elementary school ends and the high school begins.

Remembering that one fundamental object of all American education is to disseminate common interests and a good mutual understanding of them among all the people, it is important that the studies and activities of the high school should cover all the interests of our civilization so far as they can be rendered interesting, intelligible, and accessible to children and youths of high school age. In other words, the scope of high school education should be as broad as human interests.

To conserve, improve, and transmit these interests of society in the most effective way, it is important that each pupil, during the period of adolescence, should be led to self-discovery in respect to his dominant tastes and capacities. He should shape his educational career progressively in harmony with that discovery in order that his work may be most fruitful of results for his own growth in knowledge and power while in school, and subsequently; and to equip him to become a thoughtful and an active member of the society of which he is to be a part. Under other circumstances he can hope for only mediocre achievement both during his school life and thereafter. If he does achieve more it will be rather in spite of than because of his education.

The pupil's high school education therefore includes a training in choice—primarily, the choice of studies; and, to accomplish this end, it must offer a considerable range of elective studies, and insist on persistence and satisfactory achievement in all that the pupil undertakes. To prevent undue narrowness and premature specialization in the pupil's education, the public high school must insist on attention to a considerable variety of studies as well as on concentration of effort in a single field of study.

Every high school, or, in large cities, every system of high schools, must therefore so manage the pupil's work that the final result of his high school education is more comprehensive and thorough in some one field of study (not necessarily in one subject) than in others; and that, at the same time, the pupil has some acquaintance (at least a single course) in each of a considerable number of other studies, these other studies lying outside the range of the pupils' specialty.

In vocational high schools, the field of concentration should be more comprehensive than in general high schools; and all the studies must be so chosen and taught as not to impair the realization of the dominant aims of those schools.

The conception of a school study or activity implied throughout this discussion is that each study is a portion of valuable, organized, and, so far as it is contained in books, recorded human experience, arranged for purposes of assimilation by the pupil. Unless such a conception of school studies and activities underlies the work of the teachers, the pupil's work is likely to be abstract, formal, and often meaningless to

him, and hence unrelated to "life." If this conception prevails among the teachers, his high school career ought to be progressively and more comprehensively and intensively that part of the pupil's life which makes all the rest of his life significant and valuable (as was said above of his elementary school career). This conception should therefore stimulate the pupil to carry forward, for life, his own development, and his comprehension of and power to deal with the resources and the problems of our civilization; whether on leaving the secondary school he proceeds to some higher educational institution or enters, at once, on his life work.

In accordance with the principle that restricted our whole inquiry to what we could reasonably expect to accomplish, the report deals with only two comprehensive aspects of the city's provision for high school education, namely: The courses of study, general and special; and certain problems of organization and administration.

### **Courses of Study except Commercial Courses**

The courses of study have been analyzed and compared with the courses of study in ten other large and representative cities of the United States, first, in their general features, and, second, in important details. New York City, like the other cities, provides: *a.* a general course and general high schools; *b.* special courses within the general schools and *c.* specialized schools. Through this analysis of New York City's high school offering and comparison with the offerings of other cities, and in view of the aim of all high school education as formulated, we sought an answer to this fundamental question, namely: Is the high school instruction offered by the city as broad in scope, as continuous and intensive in the several fields of study, as flexible in administration, and as readily available to all who can profit by it, as it should be to meet the individual and social needs of its great and varied population? To this question the answer must be negative, as will appear from the following considerations.

Pupils who enter the high schools may be conveniently classified in two main groups—those who have not decided on their future careers, educational or otherwise, and those who have.

The first group consists of those whose dominant interests and abilities are yet to be revealed, and who can or actually do defer their choice of further education or of a vocation to a later time. For them the general course or school should offer, among other things, the opportunity for self-discovery, training in choice of work (in school and beyond), and progressive adjustment of their school work to individual interests, capacities, ambitions, and needs.

The second group comprises a number of subdivisions—(1) those preparing for college; (2) those preparing for higher technical schools, or for positions of some responsibility in industrial establishments; (3)

those who aim at directive positions in commercial or financial houses, or, at least, at positions above mere clerkships; (4) those seeking preparation for subordinate positions—clerkships of various kinds; (5) those who wish to enter the city training schools for teachers; and (6) those who from the beginning feel that they are unable or do not expect to remain in school long enough to graduate, but seek such preparation as they can get while they remain for the subordinate positions they must take when the time comes for them to leave school. For this entire group, special courses or schools should be so broad in scope, so thorough in instruction, and so accessible that any pupil may find in one or the other of them, without undue expenditure of time and energy, the preparation he requires for as successful a future career, educational or otherwise, as his ability, industry, character, and resources permit.

The courses and schools provided by New York City do not satisfactorily meet the needs of either of these groups of high school pupils. Seventeen of the twenty high schools of the city provide the general course; but since these schools are widely scattered, and, further, since nearly every high school in Brooklyn and in Manhattan is a specialized school in one respect or more, the availability and efficacy of the general course for its purpose are greatly diminished. The special courses in general high schools are thus also widely scattered; so are the specialized schools, and these are very few in number.

We accordingly recommend that city-wide investigations be made under the direction of the Bureau of Investigation and Appraisal to determine the accessibility of present high school opportunities (similar to the investigation made several years ago for the Borough of Brooklyn, by a committee of the High School Teachers' Association); and of high school needs not now provided for; and that the different types of courses or schools be located where required, and within walking distance of the homes of the pupils, as shown by the investigation.<sup>1</sup>

Meanwhile, we recommend that the chief aim or purpose of each existing school be more clearly defined; and also that the Board of Education seriously consider paying the transportation expenses of pupils who declare their intention to remain at least a year in a high school which they wish to attend, but from which they are debarred because they cannot bear the expense of travel.

We have studied the details of New York City's high school offering as follows:

### The General Course

The single general high school course of study for New York City is even more incongruous than the single elementary school course of

<sup>1</sup> "To provide for its children the same high-school accommodations as are given by Minneapolis, Denver, and Kansas City, New York would need seventy-eight high schools instead of twenty." From an article on a report of the Committee of the High School Teachers' Association of New York City, in the *School Review*, Vol. XIX.



study, the unwisdom of which has already been discussed. Such a course rests too much on the discredited and unproved theory that whatever is good education for one set of pupils is good for all. Moreover, the New York City general course is especially noteworthy for its emphasis on the traditional or conventional subjects—Latin, mathematics, and (with some concessions to modern demands) modern foreign languages are required of all. The controlling aim of the city's high school education is too much that of the scholar, of the exceptional individual, or the fortunate pupil who has a long educational career ahead of him, and may enjoy not only a high school education, but higher education as well. But satisfactory public high school education in this country cannot thus limit its aim. It must be adapted as closely as possible to the individual and social needs of all high school pupils. The general course in New York City is much more rigidly administered than in nine of the other ten cities—whether we compare the total amount of prescribed work required for graduation, or the amount prescribed by years, or the amount prescribed in the various departments.

Further, we find that in respect to scope or range of subject-matter the New York City course, in certain important particulars, falls behind every other general course with which it has been compared, and is no more than abreast of the total offering in any of them. The most striking omissions are manual training courses for boys, adequate courses in domestic training and practical arts for girls, and satisfactory commercial courses for both boys and girls. Manual training of the right sort for boys, and domestic training and training in practical arts for girls, should afford the laboratory experience whereby both boys and girls attain a real appreciation of the significance of industrial activities, and a respect for work and workers; and the girls realize the significance and value of home making and home keeping as a fundamental requisite in satisfactory living; and both boys and girls, in their respective spheres, gain an incipient knowledge of and command over the materials, tools, and processes which make modern industrial life and modern home life possible. Moreover, these courses afford valuable opportunities, not otherwise obtainable, for vocational guidance. The omission of adequate provision for these kinds of training from the general course in most of the city's high schools is, therefore, a serious defect.

We accordingly recommend that as rapidly as possible manual training of the right sort be provided in the first and second years of every general course, and that one year of it be prescribed for graduation for every boy; we recommend, further, that corresponding courses in domestic subjects and in practical arts for girls be provided in the first two years, and that one year's work be prescribed for every girl. Such courses for girls should include, among other things, sewing and cooking, home nursing, domestic laundry work, chemistry of foods, and kindred subjects.

An appreciation of the significance of business activities is also im-

portant for a satisfactory understanding of modern civilization. Modern life is no less dependent on commerce than on industry and satisfactory homes. Hence we recommend also that appropriate commercial courses be included in the general high school course, properly differentiated for boys and girls, as indicated in the section of this report dealing with commercial courses.

We recommend also for every pupil in the general course, as soon as properly equipped teachers can be found to give it, a course in civics and vocational guidance. We have suggested that such a course be called Introductory Social Science, New York City. It should comprise a survey of the industrial and commercial life of the city, with special reference to types of occupations, and should deal in a non-political and concrete way with the problems of good city government.

For the extension of the scope of the general course in the older subjects, we recommend that intensified or specialized courses in English,<sup>1</sup> science, and mathematics be authorized, and that courses in fine art and specialized courses in music be offered.

An important detail is the intensiveness with which subjects are pursued, i. e., the weekly time allotment for the different subjects of study. Compared with the time allotments in the other cities, we find that, on the whole, New York City's high school offering is pursued less intensively in English, history, civics, and economics, mathematics, natural science, commercial subjects, industrial subjects for both boys and girls, and music, but more intensively in foreign languages, drawing, oral expression (so far as it goes), and physical training.

There is, at present, no basis for time allotment except the opinion of teachers and school officers; and we accordingly recommend that this matter be studied by the Bureau of Investigation and Appraisal with a view to determining the most satisfactory time allotments for each high school study.

Meanwhile, we share the opinion, widely held, that an allotment of less than four periods of recitation time per week for any study requiring preparation tends to make the work unsatisfactory. From this point of view, the time allotments for the following studies require revision: English, after the first year; mathematics in the second year; history in the second, third, and fourth years; science in courses that should include individual laboratory work; music and drawing throughout the four years; and we have made a series of recommendations covering the changes that seem to us desirable in time allotment, and certain related changes.

The foregoing recommendations concerning the extension of the scope, intensiveness in details, and better adaptation to individual and

<sup>1</sup> In the present general course, English is allotted less time than either Latin, French, or German—and that in a city in which, in 1908, more than half the high school pupils were children of foreign-born fathers. Statistics of the nationalities of the fathers of the 50,902 high school pupils in 1910 are not available, but there is no reason to believe that the proportion of foreign-born parents has diminished.

social requirements point also to the need of greater flexibility in administration. As already stated, the present general course of study is much more rigidly administered in New York City than in the other ten cities. This is true whether we consider the total amount of prescribed work (70.1 per cent. of the total number of "points") required for graduation, the amount prescribed by years (exclusive of subjects requiring no preparation—100 per cent., the first year;<sup>1</sup> 75 per cent., the second; 50 per cent., the third; and 35 per cent., the fourth); or by departments of study. As this rigidity is particularly marked the first year, it can hardly be doubted that it is one important cause of the great loss of high school pupils from the first year's class (10,129 and 12,105 in 1910 and 1911, respectively—considerably more than half the total number "discharged" in each year from all the classes. City Superintendent's Thirteenth Annual Report, pp. 105, 106).

As to what should be prescribed, in general, we offer the following considerations: In view of the ultimate aims of public high school education and the great diversity of individual and social needs, we are convinced that in general, and for New York City in particular, the English language and literature and the social sciences should hold a prominent place among the studies required of all pupils; first, in order that a satisfactory command of the English language as a means of oral and written expression may be attained by all, and the guiding and inspiring influence of English literature may be brought to bear on all; and, second, so that history, government, and economics may lead to an appreciation of the world's worthiest achievements, in government and in social interests generally, and particularly the evolution of democratic government; and of what these have cost not merely in blood and treasure, but especially in personal service. Similarly because of the fundamental importance of the natural sciences in contemporary civilization, some training in them is essential to all who aspire to be something more than subordinates. Further, because no other study affords the laboratory experience that the right kind of manual training affords for an understanding of the constructive and productive activities by which society maintains itself, and in which thousands of individuals find careers of progressive usefulness and personal satisfaction, some manual training should be accessible to and be prescribed for all boys; and similarly because commerce parallels industry in our social structure and equally offers a career of usefulness and satisfaction to thousands of individuals who choose wisely, some instruction in commerce<sup>2</sup> should be required of all boys. Again, because home-making, or at least the direction of a home, is one of the fundamental occupations of women,

<sup>1</sup> Although the printed course of study allows a choice of Latin, German, or French, the pupil *must choose* one of them. Moreover, in administration the nominal choice is actually narrower than this. In one high school, for example, no foreign language except Latin is taught during the first year.

<sup>2</sup> *Not* the clerical arts, however. See Commercial Courses and Commercial High Schools, below.

and society needs good homes, some instruction in domestic science and practical arts for women should be accessible to and be prescribed for all girls. Health and good recreative habits are essential to all; hence physical education (including games and athletics) should be accessible to all, and some of it should be prescribed for all. Since the wide dissemination and appreciation of the serious pleasures afforded by the fine arts and music are indispensable to the progressive refinement of individuals and of society, instruction in the fine arts including music should be accessible to all, and some of it should be prescribed for all.

Accordingly, we hold that the only justifiable prescriptions for all high school pupils are: courses in English, the social sciences, natural science (including physiology and hygiene), manual training for boys, and the appropriate "practical arts" (including domestic science) for girls, physical training, and fine art (including music). Consequently we cannot approve the present requirement that every pupil who wishes to graduate from the general course in New York City must take three years of foreign language and two years of mathematics. We believe this requirement to be indefensible, and we recommend that it be abolished.

It is obviously undesirable, however, in view of the immaturity of high school pupils, to abandon them to their own devices in choosing their studies. We accordingly recommend that the principal and teachers of each high school formulate a considerable number of suggestive schedules, each incorporating from the total offering of the school the studies prescribed for all; and each in addition concentrating the pupil's work on some one of the principal departments of study—English, foreign languages; history, government and economics; mathematics; science; and dispersing his attention over all the other departments to the extent of at least one course in as many of them as is consistent with satisfactory annual achievement; and that each pupil, with the advice and consent of his parents and the principal (or teachers designated by him for the purpose), choose one of these schedules or "sub-courses"; and that this choice, once made, should not be lightly nor easily abandoned.

We recommend, further, *that a diploma—not merely a certificate—be granted to any pupil who satisfactorily completes any scheme of studies approved by the principal of the school, whether such scheme embodies all the prescriptions of the State Department of Education or not.* This last recommendation is especially important in view of the fact that pupils should be encouraged to secure the education that is best for them individually and not merely the conventional education determined by the Regents' examinations. For further important details concerning these recommendations the reader is referred to the report itself.

Finally, we recommend that the procedure and results achieved, if these recommendations are carried into effect, or the present procedure

and results, if they are not, be studied and reported on by the Bureau of Investigation and Appraisal.

### **The Special Courses and the Special Schools**

The special courses in the general high schools and the special schools themselves are obviously intended to meet the needs of the second main group of pupils with its subdivisions referred to above. The important question concerning these courses and schools is: Are they well adapted to the needs of the pupils of this group, and how accessible are they to them?

The general course provides ample opportunities, so far as its scope is concerned, for those pupils who are preparing for college, and for the City Training Schools for Teachers; hence so far as this course is accessible to them, these pupils are provided for. The criticisms and recommendations already made concerning the accessibility of these opportunities apply, however, but need not be repeated here. The following section deals with commercial courses and commercial high schools, and consideration of them will be omitted here.

There remain, then, first, the subdivision of pupils who attend the special high schools either to prepare for higher technical schools or for the minor directive positions in industrial establishments; and, second, the pupils whose stay in school is necessarily short. For both these groups the present provision is not satisfactory.

No investigation is needed to show that four manual training schools in New York City are not sufficient to meet the needs of the first group, especially since no manual training is offered in the general course in any part of the city. Hence many boys must either travel long distances, or, if they go to a high school at all, enter a school within walking distance which offers no manual training.

Accordingly, we recommend that as speedily as possible as many manual training high schools be established as the findings of the Bureau of Investigation and Appraisal may show to be needed; meanwhile, that at least one such high school be established in the Bronx and one in Richmond; and that an additional school of this sort be established in Queens. Or, if these schools cannot be speedily secured, at least that manual training courses parallel to the general courses be established in as many schools as possible in each of the five boroughs.

We recommend, further, greater intensiveness in certain studies and an extension of the scope of the instruction—both specified in the report—to bring the work into closer harmony with the dominant purposes of these special courses and schools; and that the instruction in the so-called “academic branches” in the manual training courses and schools be differentiated from the instruction in these studies in the general course, and that they be closely correlated to the practical work. At present the relation of the mathematics, science, and other studies to the

practical aims and work of the school is either not recognized, or, if recognized, not adequately provided for.

For the last group of pupils—those pupils whose stay in the high school is necessarily short—New York City does least of all. These pupils do not want and can make little use of the usual academic high school course, or the four-years' course planned for the more fortunate pupils with a longer school career in prospect; and yet such instruction is the only high school instruction available to the majority. What these pupils want is instruction that will enable them to adjust themselves quickly to the minor positions in the business and industrial world, with an equipment that will enable them to command a living wage at the start; and it should be said that such persons are needed in large numbers. In their own interest, however, as many of these pupils as possible should be brought to see the disadvantages of an education as limited as the education they aim at. We recommend, therefore, that courses broad in outline, but also intensely practical—such, for example, as the technical courses of the Washington Irving High School and certain proposed courses for the Wadleigh High School—be widely established in the general high schools and in the special schools. (The courses just referred to are the only ones in the city that meet directly the needs of the pupils under consideration.) Also, we recommend that similar courses appropriate to the needs of the boys, so far as these needs are already apparent, be provided extensively throughout the city, and that the principals of the schools be authorized to discover the real needs of both boys and girls, and to establish the special courses that are required to meet them; and as before that the Bureau of Investigation and Appraisal study and report on the results achieved.

From the foregoing it is clear that appropriate extension of the scope of the instruction, accessibility of the instruction, and flexibility in the administration of the instruction, in view of the enormous size of the city and the great diversity of its population, should receive immediate attention.

### **Commercial Courses and Commercial High Schools**

Commercial courses are offered in eleven of the general high schools, and in the two commercial high schools. In the general high schools the courses are three years long, except that one of these schools (Curtis) has a four-years' course for boys. Of the two commercial schools, the High School of Commerce (Manhattan) has a four-years' course, and the Commercial High School (Brooklyn) has both a three-years' and a four-years' course.

These courses have been analyzed in order to discover whether and to what extent they meet the need of vocational training for the pupils who attend them. In the general high schools the subject-matter of the courses is largely clerical—bookkeeping, business arithmetic, stenography, and typewriting. This subject-matter has been and evidently is

still regarded as instruction in commerce, although it is not really such instruction at all. It can only train office clerks. It gives no insight into and develops no power to deal with the data or materials of commerce—business organization, activities, problems, and opportunities. In the two commercial high schools the clerical subjects are also prominent, but commercial science, commercial foreign languages, and economic subjects are added. Clerical subjects are therefore prominent in all commercial courses in all the schools. There is also comparatively little relation of the “academic work” in these courses to their real purpose—the mathematics, modern languages, and science are those designed to meet the Regents’ requirements,<sup>1</sup> which, in turn, are planned to meet the traditional academic or college entrance requirements.

Moreover, there is no satisfactory differentiation between commercial courses for boys and those for girls, especially in the general high schools. The wisdom of such differentiation is seen, however, when we study the occupations open to boys and girls. At the time of our investigation (April, 1912) the secretary of the Permanent Census Board had prepared a report on the occupations of a large number of New York City boys and girls between fourteen and eighteen years of age. Among these, 586 boys and 3,244 girls were stenographers and typewriters; 824 boys and 1,364 girls were bookkeepers. It is true, of course, that to be a good office clerk is a worthy aim, that good office clerks are in demand, and, hence, that the schools very properly offer the training that office clerks require; but such training must not be confused with training for commerce—for a career in business—as has already been pointed out.

Clerical training at best constitutes only a very small part of training for business, and is not an essential part of it. This estimate of the place and value of clerical training in commercial education is supported by evidence collected by us from business men, through the courtesy of the New York Chamber of Commerce; and similar evidence was afforded by an inquiry made in Boston, in 1906, and in Pittsburgh in 1909. Nor should the idea prevail that a start as an office clerk launches a youth on a business career. Sometimes it does, but not because he is a trained office clerk. Investigations into promotions and transfers in business houses show that employees in clerical work are not often promoted by transfer to other departments—the active departments of the business. Employees tend to remain in the departments in which they began; and the limit to advancement in the office force is soon reached.

In general, not more than about 15 per cent. of the employees of business houses in New York and Boston are found in clerical (office) positions, while from 40 per cent. to 50 per cent. of the entire force are found in the active or competitive side of the business. Further, business men do not now regard the product of the commercial course or

<sup>1</sup> With the possible exception of one course called Commercial English and Correspondence.

school as superior to the product of other courses or schools. True, when they want office clerks they may seek boys and girls who have been trained in such courses or schools; but not often when they want business apprentices. This is because the "business schools" have gained a reputation for training clerks, but not other employees.

At present, therefore, it is true that the non-commercial courses and schools are at least as important as, if not more important than, the commercial courses and schools in furnishing recruits for commercial pursuits. It is true that the boys and girls go from all these courses into commerce, but that fact does not make them commercial courses. A very large proportion of all boys and girls coming from the high schools and colleges go to work in business houses, but they are not on that account commercial schools and colleges. In fact, the effect of commercial education on business efficiency has been so slight up to the present time as to be almost negligible.

Our analysis of New York City's commercial courses and schools accordingly shows that, apart from the emphasis on clerical training, they are academic rather than vocational; and that, so far as they are vocational, as has been said, they emphasize the least important aspect of commercial training—clerical training. Further, the courses in the two commercial high schools are lacking in intensiveness—too many subjects are pursued simultaneously and with too small time allotments per week. In both these schools also the attempt is made to meet college admission requirements, and this interferes with satisfactory realization of the main purpose these schools should serve—vocational training for business. We have accordingly recommended certain changes in the courses of these schools, so as to make them conform to their real aims.

We have found also that the commercial courses and schools suffer from a scarcity of teachers having commercial experience and an active interest in commercial education. In the Commercial High School (Brooklyn) for example, aside from the teachers of the clerical arts, seventy-eight teachers came from the general lists of teachers for the non-vocational high schools. These last can hardly be expected to have the point of view of teachers in vocational high schools, nor can they be expected to develop it rapidly after they enter such schools. Meanwhile, of course, the instruction fails to accomplish its purpose because the teachers are not trained for that purpose, and not infrequently have little sympathy with it.

In view of the present condition of the city's commercial education, it is not strange that we find principals and teachers testifying to the relatively lower grade of commercial pupils in respect to mental power, social standing, personal qualities, and ambitions, as compared with other pupils, particularly in the general high schools. Naturally, the ambitious and able pupil will not take a course that does not challenge his ability nor minister to his ambition. The fault here lies with the educa-



tional authorities in failing to plan and carry out commercial courses that will appeal to the ablest and most ambitious, and to their parents as well. For the parents are ambitious, too; many of them naturally fail to see in the commercial training now offered preparation for as profitable and honorable a career in business as they can get in another course or school for a profession; and hence direct their children away from the commercial course or school to the course or school that leads to college or a profession. Teachers, too, often share this unenlightened attitude toward business as compared with a profession. It is true, of course, that as long as the commercial courses and schools do not train for business careers, all the better pupils are right in avoiding them, and the parents and teachers are right in advising such pupils to attend other courses or schools.

Meanwhile, the attitude of the business world confirms this attitude of teachers and parents. Since business men have not experienced the advantages of commercially well-trained employees, they do not demand commercial training. In general, they state frankly that they make no educational requirements of their employees, although, personal qualities and general intelligence being the same, the better educated are preferred. Yet business men demand that the schools provide the business apprentices they need, and frequently criticise the schools severely for their failure to meet this demand.

The fact is that the schools alone are unable to meet this demand. What is needed is a clear definition of the aims, scope, and methods of the training actually required for business careers as seen by business men who have seriously brought their minds to bear on this problem, and the gradual development of instruction that will provide this training by the schools. In other words, the solution of the problem of satisfactory commercial education must be sought in the coöperation of commerce and education, just as the solution of the problem of industrial education is sought in the coöperation of industry and education. Commerce, like industry, must recognize its responsibility to the thousands of young lives devoted to its service.

Accordingly we recommend that a temporary special commission be appointed by the Board of Education to consist of commercial teachers temporarily relieved of their ordinary duties, to investigate with the help of business men business conditions in relation to commercial education; and to lay the foundation for coöperative relations between commercial courses and schools and commercial houses. That New York City business men are prepared for such coöperation is shown by the action of the Chamber of Commerce in appointing a special committee on commercial education.

Meanwhile, we recommend a revision of New York City's conception of commercial education so as to secure appropriate emphasis on the larger and more important aspects of business; and that a council of chairmen of commercial departments and commercial high school

principals be constituted to study the present results of commercial education under the general direction of the Bureau of Investigation and Appraisal; and that this council shall be recognized as the official agency for studying courses and methods and to make recommendations for improvements to their official superiors. We further recommend that the sexes be segregated, whenever possible, for commercial instruction, and that the instruction be adapted to the needs of each sex; that the Regents' tests for commercial subjects and related academic subjects be abandoned in favor of objective standards drawn from the results of commercial training as shown by the careers of the pupils; that separate eligible lists for all teachers in commercial courses and schools be established; that there be a supervisor of all commercial courses and schools; and, finally, that as fast as possible coöperative and continuation courses for commercial employees be established, similar to the coöperative and continuation courses recommended above for industrial employees.

### **Certain Problems in the Organization and Administration of the High Schools**

The high school principals are, by the by-laws of the Board of Education, the executive heads of their several schools, and are required to organize and administer them under the direction of the Board of Superintendents. The immediate administrative and supervisory control of the high school system is vested in two officials—the Associate Superintendent, who is chairman of the Committee on High Schools of the Board of Superintendents; and one of the district superintendents, who is assigned to the high schools.

This administrative and supervisory system limits the principal's activities to the details of organization, administration, and supervision within his own school. For example: the principal has no voice in the selection or appointment of teachers, he must take the candidates first on the eligible list; the amount of teaching to be done by a teacher or first assistant, after he is appointed, is determined by the standards fixed by the Board of Superintendents; the standard size of recitation sections is likewise fixed by the Board of Superintendents; the courses of study and the syllabi are determined by the Board of Superintendents, with such assistance as that board sees fit to invite, there being no recognized official channel through which principals and teachers make their views known to the Board of Superintendents; supplies and text-books are ordered by the principals from a list approved by the Board of Superintendents.

Principals may be assisted in the administration of their schools by teachers having the rank of first assistant. First assistants, besides being general administrative officers under the direction of the principals, are, wherever possible, made chairmen of departments of study, and as such are in charge of their respective departments.

Our study of high school organization and administration was necessarily limited to five related problems. The first of these concerns the size of recitation sections, and was undertaken in response to President Mitchel's question, "What is the largest practical size for classes in high schools?" His object was to secure a basis for estimating the number of teachers required. The size of sections is one of the factors that determine the number of teachers required (and vitally affects the quality of the instruction). But the amount of teaching and other work done by the two classes of teachers—first assistants (chairmen of departments), and other teachers—also determines the number of teachers required; and since these and other matters of internal economy are subject to the administrative control of the principals and the Board of Superintendents, a study of the size of sections with a view to ultimately determining the number of teachers needed must include a survey of the work of teachers; and of the control of the principals and of the Board of Superintendents over the internal organization and administration of the schools.

#### **Accordingly We Have Studied:**

The size of sections; the work of chairmen of departments; the work of other teachers; administrative control in relation to internal organization; estimating the need of high school teachers.

#### **The Size of Sections**

We have made typical studies of the size of sections for the entire city in German and in mathematics only, both because it was manifestly impossible with our limited staff to study the size of sections in all subjects, and because this study abundantly illustrates the method to be followed in such an inquiry. The departments of mathematics and German were chosen because they were found in all the high schools, and the time allotments are as nearly uniform as in any. Finally, since our data on the size of sections in mathematics point to the same conclusions as those for German, it will be sufficient to deal only with our findings for sections in German.

We find: that the actual size of sections for the city as a whole does not sufficiently approximate a standard; the smallest section consists of five pupils, the largest of sixty-five. Only 51 per cent. of the sections are within the limits of the standard fixed by the Board of Superintendents. Sixty-one and seventy-five one-hundredths per cent. of the sections in the first term conform to the standards—thirty to forty pupils; and only 29.6 per cent. of the sections in other terms conform to the standard—thirty to thirty-five pupils.

Similar conditions prevail in individual schools. We find, further, that 93.75 per cent. of the first-term sections with less than thirty pupils were avoidable through a different distribution of pupils; and 94.74 per cent. of the first term sections having more than forty pupils were

avoidable through a different distribution of pupils and the employment of more teachers. Similar but even more striking results were obtained from studying the size of sections in second to eighth terms inclusive. To show the importance and the method of such a study of the size of sections for administrative and supervisory purposes we have made a detailed study of the organization of sections, by terms, in three selected high schools.

Our principal findings as to size of sections are: that large sections are due to the present official standard size, which, we think, is too large;<sup>1</sup> the lack of necessary teachers; in a few cases, to bad distribution of pupils by principals; and that small sections are due to the inevitable small number of pupils in the upper terms of work, and in a few cases to bad distribution of pupils by the principals. And we recommend that a provisional standard size of section for all terms be adopted—to be tested in practice—and that this standard be thirty pupils; that enough teachers be employed to enable principals to maintain sections that closely approximate the standard size; and a careful study by the principals of program-making, in order that necessary over-size sections may be reduced, and unnecessary undersize sections may be avoided.

### **The Work of Chairmen of Departments**

Chairmen are not only the administrative and supervisory heads of their respective departments; they are teachers, and assistants to principals, and they are also assigned to study-hall supervision. We find that 75 per cent. of the chairmen of the departments of English, Latin, French and German, mathematics, biology, chemistry, physics, and history, in the larger high schools<sup>2</sup> are teaching more than fifteen periods per week—the maximum fixed for chairmen by the Board of Superintendents.<sup>3</sup> These chairmen have only 58.26 per cent. of the time theoretically reserved for duties other than teaching, and this proportion is reduced to 40.5 per cent. by the time required in these schools for study-hall supervision. In the smaller schools 86.9 per cent. of the chairmen are teaching more than the maximum of eighteen periods for smaller schools, and have actually only about one-third of the time set apart for other assigned duties, and 30 per cent. of them have less than one-fifth of the time. In view of the other important duties devolving on chairmen in addition to teaching, we recommend that every effort be made to conform to the standard assignment of teaching. The great size of the larger high schools entails an amount of administrative work which the principals cannot carry alone. The principals, accordingly, necessarily delegate to first assistants numerous and varied administrative duties

<sup>1</sup> There is, at present, no basis for this assertion except general educational opinion.

<sup>2</sup> Schools with more than 1,000 pupils.

<sup>3</sup> Twenty-five periods of work per week are recognized as a satisfactory assignment for high school teachers.

specified in the report. When a first assistant is also chairman of a department, it is clear that this assignment still further reduces the time of a chairman theoretically set apart for duties other than teaching.

In most of the city high schools the administrative and supervisory details devolving on the chairmen of departments are equal in amount to the corresponding responsibilities of most high school principals in other cities of the country. We agree entirely with the chairmen of departments that their most important duties are the organization and supervision of the work of their respective departments. For these duties they now have too little time. They are devoting more time to teaching than the maximum amount fixed by the Board of Superintendents, and their other assigned duties take most of the remaining time.

Our study of the administrative and other duties assigned to chairmen shows that some of them could be performed by competent clerks, while others of them could not; and we recommend that clerical and administrative functions be clearly distinguished; that clerical functions be assigned to competent clerks and not to teachers, and that administrative functions be assigned to the teaching staff, including the chairmen; and that the principal have at his disposal a sufficient amount of the time of the teaching staff for this purpose. Other recommendations concerning the work of chairmen are given in the report.

### **The Work of Other Teachers**

Our study of the amount of work of other teachers was necessarily limited to a few departments—English, German, mathematics, biology, history, but this study was comprehensive enough to cover essential and typical details. We found, among other things, that, if to teaching we add study-hall supervision, only about 2 per cent. of these teachers have less than twenty periods of assigned work, and more than 41 per cent. of them have more than twenty-five periods. Possibly some of these teachers are teaching too little, and some too much. We recommend an inquiry into this matter. In addition to teaching and study-hall supervision, more than 50 per cent. of these teachers have other assigned work—clerical and administrative. Teachers cannot be expected to do clerical work as well as clerks, nor should they be expected to do such work in addition to a full day's teaching and other work. On the other hand, clerks cannot do administrative work requiring the knowledge and experience of teachers.

We therefore recommend, as before, that clerical and administrative duties now assigned to teachers be clearly distinguished; that a sufficient number of competent clerks be furnished to each high school to do the clerical work; and that each principal have at his disposal a sufficient amount of the time of his teaching staff for administrative duties, in accordance with the estimates given in the report.

The foregoing recommendations cover immediate measures for the removal or at least the amelioration of certain obstacles to efficiency. We also recommend that this whole matter of the work of teachers and chairmen be studied further and reported on by the Bureau of Investigation and Appraisal, in order that present conditions may be fully realized, and the effect of our recommendations, if adopted, may be known. In this way a solid foundation can be laid for the progressive maintenance of satisfactory working conditions in the schools.

### Administrative Control

It remains to determine the responsibility and authority of the principals and of the Department of Education (Board of Education and Board of Superintendents) for the size of sections and the work of chairmen and other teachers. It has already been stated that the principal does not alone control the organization of his school. The standard size of sections and the standard amount of work to be assigned to teachers including chairmen are fixed by the Board of Superintendents; and the Department of Education, or the Board of Education, or the Board of Superintendents, is charged with fixing the program (course) of study, the size of the school, the size and number of classrooms, and the number of teachers—all of which profoundly affect the organization of the school in respect to size of section and number of teachers available.

Since the principals are directly responsible for the daily programs involving the number and size of sections and the amount of work to be assigned to teachers, we recommend that a thorough study of the making of daily programs be undertaken by the principals.

In view of the responsibilities of the Department of Education, we recommend that an investigation be undertaken to determine the effect of a number of different "courses" within a school and of elective studies on the number and size of sections and on the amount of teaching required to care for a given number of pupils; and into time allotments for different studies taking into account the necessity of adjusting these time allotments to a satisfactory daily program.

We share the practically universal opinion of high school principals that New York City high schools are in most cases so large that the principal cannot satisfactorily discharge his normal responsibilities to pupils, teachers, and parents; and that the unification of his school as to educational policy and results is very difficult, if not impossible; also that, for various reasons specified in the report, the system of high school "annexes" is unsatisfactory. And we recommend that high schools hereafter established be limited to about 1,500 pupils, and that separate high schools of different types take their places.

Since the size of sections is determined to some extent by the number and size of classrooms, we recommend that the seating capacity of

classrooms be limited to the maximum size of sections; that in new buildings, and in buildings now in use, wherever practicable, study halls seating 125 to 150 pupils be provided so that less time of teachers would be required for study-hall supervision, and regular classrooms would be released for recitation purposes; and that more classrooms (buildings) be provided.

In view of the present unsatisfactory method of increasing or decreasing the number of teachers in a department, we recommend that a reorganization blank be adopted, the nature of which is indicated in the report, and which provides the necessary data concerning the number and size of sections, and the amount of teaching done and to be done.

### **Estimating the Need of High School Teachers**

If the standard size of sections were fixed, and if the size of each section necessarily conformed closely to the standard, if classrooms were adequate in number, and were so planned as to fit the standard size of section, and if teachers had no other work to do than to teach, the problem of estimating the number of teachers needed would be simple. As we have seen, none of these conditions hold in practice, hence the problem is decidedly complex. It is clear also, from what has been said, that estimating the need of high school teachers is a very different problem from estimating the need of elementary school teachers—high school conditions and needs being very different from elementary school conditions and needs.

We find that the blank used in 1911 for estimating the need of high school teachers is unsatisfactory, in several particulars specified in the report; and, in general, because it furnishes only the most general information concerning the organization of each high school, and registers the estimate of the principal concerning his need of additional teachers, without giving the evidence on which his estimate is based. We accordingly recommend the use of a new blank, given in the report, the purpose of which is to base the estimated need of teachers on recorded facts concerning past experience, present organization, and future needs, all in view of the educational interests of the children; further, that this blank be used for a sufficient length of time to test its value, and that it be revised from time to time, as experience may determine, but always with a view to providing more satisfactorily the information needed.

Our conference with high school principals on the proposed blank showed considerable fear on their part that, notwithstanding the statement of their real needs which the blank requires, their estimates would be subject to reductions because the tendency to reduce estimates seems to be pretty well fixed in all supervisory and financial authorities. We are confident, however, that if it be appreciated by all

concerned that the estimates are as nearly accurate as the most careful grouping of facts can make them, the danger feared by the principals will be minimized.

#### IV. THE SYSTEM OF GENERAL SUPERVISION AND THE BOARD OF EXAMINERS

The schools of the city, like the schools of other cities, are, or should be, subject to four principal kinds of control—legislative, administrative, supervisory, and inspectorial. External legislative control is exercised by the state through its legislature. Administrative control should be exercised by the Board of Education and other lay bodies and officials, and also by members of the supervisory staff. So far as it is exercised by the Board of Education and other lay bodies and officials, it is non-technical, directive, and general. Supervisory control is professional or technical; it should be characterized throughout by constructive effort in relation to the aims, means, methods, and results of education including helpful service to subordinates; it should be exercised by superintendents, directors, and principals, under conditions that guarantee responsibility and freedom of action. Inspectorial control, like supervisory control, is necessarily based on technical knowledge and skill, but its aim is impersonal objective measurement of educational results. It is or should be regulative for the other forms of control. It is important to distinguish clearly between these different kinds of control in order to determine the powers and duties of the different agencies responsible for them, and their relation to each other—their independence and interdependence. The failure to do so is responsible, to a large extent, for the lack of effective correlation between these controlling agencies in New York City. Legislative control and administrative control (so far as they are exercised by the Board of Education) are discussed in the next section. We are here concerned with supervisory and inspectorial control, and administrative control so far as it belongs to the supervisory staff.

The revised charter of 1901, which went into effect so far as the school system is concerned in 1902, remains in all essential respects the source of the city's system of school control. The principle which it incorporated into the school system is *unification* through the centralization of administrative and supervisory authority in a central Board of Education, the Board of Superintendents, and the Board of Examiners. In respect to supervision, the charter evidently contemplates a series of ranking officers from the City Superintendent of Schools and the Board of Superintendents to the Associate City Superintendents as division superintendents,<sup>1</sup> to the district superintendents, to the directors of special branches, to the principals, to the teachers.

<sup>1</sup>The forty-six supervisory districts are grouped in divisions and an Associate Superintendent is assigned to such a group of districts as Division Superintendent.



We find that, under the existing organization and procedure, the schools must respond to a maximum amount of administrative control, and are influenced by a minimum amount of competent expert supervision. Centralization of authority has been effective in bringing about the greatly needed unification of the school system. But as a permanent device and alone it fails to stimulate the initiative and coöperation indispensable to effective supervisory control. At present "*there is a striking lack of consciousness within the school system of the radical difference between merely keeping the schools in operation and keeping the schools in operation so as to produce tangible results of high value.*"

### The Principals

The provision for supervision within the elementary schools would be adequate, provided the supervisory staff—principals, heads of departments, and assistants not teaching—were competent and free to devote themselves chiefly to their functions as supervisory officers. It has been pointed out already that competent supervision by the principals is not now generally secured.<sup>1</sup>

The essential conditions of good supervision are not provided for by the charter and the by-laws of the Board of Education. The by-laws make the principals "the responsible administrative heads" of their schools; although under certain of the by-laws they are potentially the supervisory heads of their schools. Practically, however, all of the constructive features of their work are under the immediate control of superior supervisory officers, and the greater part of their time and energy is consumed by clerical and administrative duties. They cannot effectively perform their duties as supervisors as long as this is true. Competent supervision by the principals requires, first of all, a differentiation of their present duties so that they will be relieved of the burden of their clerical duties, and actively encouraged to subordinate their administrative duties to their supervisory functions. Incidentally, it should be noted that long service—and that in New York City—rather than potential supervisory capacity is given undue weight in determining the eligibility and appointment of principals. Such appointments conventionalize the work of the principals in accordance with New York educational procedure, and the city fails to profit by the infusion of the best professional ideals and practices of other communities.

At present there are two kinds of principals in the service: first, those who are competent to act as efficient supervisors and who, even under existing conditions, make a conscious effort to subordinate their other duties to helpful supervision; and, second, those who are content to limit themselves to mere routine. Good supervision by the principals will not prevail until there is a decided increase in the first kind of principals; and until the superior educational authorities more generally

<sup>1</sup> See p. 138.

secure and retain in office such principals only, and give them larger professional freedom in the conduct of their schools.

### **The District Superintendents**

There are twenty-six district superintendents. More than half of them in 1911 are those who automatically became supervisory officers by the provisions of the revised charter. Twenty-three of them are assigned to the forty-six supervisory districts—two districts to each superintendent—into which the city is divided; one to high schools; one to evening schools; and one to vacation schools, recreation centers, and playgrounds; and each of them is a member of the local school boards for his districts.

According to the general plan of organization, the district superintendents were to be supervisory officers of great importance, and they were to be the connecting link between the City Superintendent and Board of Superintendents and the principals, teachers, and the people. Each district superintendent was to be "absolutely responsible for the scholastic welfare of each school in his territory."

But we find that this theory has not been realized in practice, owing to the great size of most of the supervisory districts, which makes effective supervision by the district superintendent impossible; to the absence of high standards of qualifications and service for the selection and retention in office of district superintendents; to devotion on their own part chiefly to routine administrative duties, partly from necessity, and partly from choice; and to the absence of any clearly defined and officially recognized opportunity to participate in the initiation and development of educational policies.

As in the case of the principals, there are district superintendents who, in spite of these obstacles to their efficiency, endeavor to live up to the conception of their office contemplated by the plan of organization; but, in general, it must be said that the usefulness of the district superintendents, like that of the principals, has not been fully realized. And it will not be realized until many of their supervisory functions are transferred to the principals; until the existing method of choosing district superintendents does not confine their selection too narrowly to those whose training and experience have been limited to New York City; until a definite and high standard of selection of district superintendents and for their retention in office is adopted; and until the relation between the district superintendents and their superior officers is amended so that initiative and responsibility in matters of fundamental educational importance are officially provided for and actively encouraged.

### Directors and Assistant Directors of Special Branches

We could not make the necessary studies to pass judgment on the supervision and the results achieved by the directors and assistant directors of special branches. The evidence we have collected, however, justifies the assertion that, except for the kindergarten, the number of directors and assistant directors is sufficient to secure proper supervision of the special branches; that the responsibility of the directors for the scope and methods of their several subjects should be recognized, and the relation of the directors to the principals should be more clearly defined; that special teachers in certain of the special branches should be unnecessary; and that to promote the further development of the kindergarten<sup>1</sup> adequate supervision should be provided for by the appointment of additional assistant directors, and by making elementary school principals responsible for the supervision of the kindergartens to the same degree as for the other classes.

### The City Superintendent and the Board of Superintendents

The City Superintendent of Schools is, in accordance with the charter and the general state school laws, the chief educational officer of the city. Through him the educational policies approved by the Board of Education are embodied in the practice of the schools. He is to be the unifying influence through whom the various parts of the educational organization are to work together effectively for the realization of the purposes for which the schools exist.

While the enumeration given in the charter fairly represents the scope of the powers and duties of the City Superintendent of Schools, it does not represent the extent and significance of his influence. Whatever powers and duties statutes and regulations may confer on him, and also whatever limitations they may impose, his real power and influence will be determined by his wisdom, tact, and force of character.

The present City Superintendent is a man of commanding personality, of clear vision, of great industry, and of unswerving devotion to the educational interests of the city. His influence is correspondingly great. The City of New York owes to him more than to any other person or group of persons the educational progress its schools have made since the consolidation, and this progress, in spite of the defects we have pointed out, is very great. Without him it is difficult to see how such progress could have been made.

By virtue of his office with its comprehensive and varied responsibilities, it is natural that criticism of the school system, as a whole, or in details, should be directed against the City Superintendent and the two boards of which he is chairman—the Board of Superintendents and

<sup>1</sup> The kindergarten is not, of course, a "special branch"; but from the standpoint of supervisory policy it is included here, for convenience.

the Board of Examiners. And, in fact, such criticism, whether just or unjust, whether from within the school system or from without, is insistent and persistent. The criticisms brought to our attention not infrequently exhibited strong personal feeling, even animosity; and were important for us only when they concerned real defects in the organization of the supervisory system and the efficiency of the staff. Such criticisms from without the school systems were, on the whole, similar to those from within, and need not be separately considered.

Some of the criticisms were really complaints. They came from dissatisfied individuals within the school system who charged the City Superintendent with unfair discrimination against themselves or others in the matter of appointments, transfers, or promotions. It is only fair to say that, so far as most of the individuals were concerned who brought such criticisms to our office, only one conclusion is possible, namely, that the City Superintendent was justified in his discrimination against such individuals; and the city is to be congratulated on having a superintendent who unhesitatingly incurs the antagonism of such persons because he defeats their endeavor to secure appointments or promotions at the expense of the city's educational interests.

On the other hand, some of the criticisms were of another sort, and came from a very different class of individuals from those just referred to. They were intelligent lay and professional criticisms concerning defects in administration, or supervision, or both; more or less impersonal in their character, and hence aimed not only at the Superintendent and the supervisory staff, but also at the system of supervision in which they were all involved. It goes without saying that the most useful criticism of all is of this sort from within the school system—criticism based on the information and experience of the more intelligent, disinterested, and judicially minded members of the teaching and supervisory staff. Many such persons—teachers, principals, and superintendents—were willing individually to offer unbiased and well-supported evidence concerning the methods and effectiveness of the present supervisory system, from the City Superintendent's office down. Unfortunately, however, they were in nearly all cases expressly unwilling to be known as the individuals who gave the information and made the criticisms referred to. They almost invariably alleged that to be known would endanger their professional standing and advancement.

This attitude may be wholly groundless, but it is widespread. From our point of view, whether founded or unfounded, it indicates a serious obstruction to the professional growth and efficiency of all concerned. Such an attitude paralyzes coöperative effort in the teaching and supervisory force; and *coöperation under leadership is essential to good supervision*. Leadership there is—the City Superintendent is an unquestioned leader in every detail of the vast interests over which he presides—but coöperation, especially collective coöperation, is not invited or encouraged in such a way as to secure the free and fearless discus-

sion of mutual professional interests in which individual responsibility for views expressed and measures advocated are willingly assumed. How to secure such coöperation is one of the most important problems which the City Superintendent faces, and with which we have to deal. At present competent criticism is either intentionally or unintentionally discouraged; and unintelligent and carping criticism is allowed to undermine professional interest and enthusiasm within the school system, and public confidence without. Our proposal for a Supervisory Council offered below is intended to suggest a way out of the present untoward situation.

The chief difficulty seems to be due to the failure to distinguish between administrative control and supervisory control. So far as the City Superintendent is an administrative officer, his powers should be broad and direct. In several respects his authority should be enlarged; and this is particularly true in respect to many activities now under the control of the Board of Superintendents. As a supervisory officer he should be the executive officer and agent of the Board of Education and of the supervisory and teaching staff.

But the scope and method of his work as a supervisory officer need to be studied far more thoroughly than was possible within the time and with the resources at our disposal. Consequently we recommend that the Bureau of Investigation and Appraisal make such a study, with a view to defining the supervisory functions of the City Superintendent, so as to secure for the schools the leadership of the Superintendent in relation to the supervisory staff, while broadening and strengthening his functions as an administrative officer; and that meanwhile immediate steps be taken for the establishment of a Supervisory Council through which the necessary coöperation of teachers, principals, and other supervisory officers with the Superintendent's office may be officially provided for. Both these recommendations are considered in some detail in the report, and they are referred to again below.

### **The Board of Superintendents**

The Board of Superintendents consists of the eight Associate Superintendents and the City Superintendent, who is chairman of the board. The Revised Charter places the initiative in all educational matters in the hands of the Board of Superintendents. We find that the Board of Superintendents has become bureaucratic, and hence non-progressive. When it was first constituted, it may have been the best instrumentality available to bring about homogeneity and coherence—unity of aims and effort—within the school system. But it does not now represent either as to constitution, organization, or function a really serviceable agency for the initiation or development of educational policies; or for professional growth on the part of supervisors, principals, or teachers.

The assignment of the associate superintendents as division superin-

tendents to groups of districts has made the district superintendents directly responsible to an associate superintendent, who is, in turn, responsible for the educational welfare of his section of the city. This assignment of the associate superintendents was intended to secure direct representation in the Board of Superintendents for the schools of each division. This intention has not been realized, however, because the routine administrative duties of the associate superintendents as members of the Board of Superintendents prevent them from being real supervisory officers for their divisions.

At present the Board of Superintendents attempts to exercise the three forms of control—administrative, supervisory, and inspectorial. In small school systems these forms of control are not independent; but the magnitude and complexity of the school system of New York City necessitate specialization in order to secure efficient service.

For the exercise of administrative control the Board of Superintendents is unnecessarily complicated in organization and methods of procedure. The administrative and executive functions of the board as enumerated by the charter and in the by-laws of the Board of Education could be more promptly, economically, and effectively discharged under the direction of a single officer. Some of the principal powers of the board as enumerated in the by-laws properly fall within the jurisdiction of the City Superintendent; some of them should belong to a representative body of supervisors and teachers (one item cannot literally be carried out by a board); and one important item raises the issue as to whether district superintendents and directors should not be nominated from an eligible list as are teachers and principals.

As supervisory officers the members of the Board of Superintendents are too far removed from the actual conditions confronting teachers, schools, and neighborhoods to render the kinds of service most needed.

For inspectorial control, i. e., for the proper inspection and appraisal of the work of the schools, training and capacity radically different from those of administrative officers are required; and the work of the Board of Superintendents is at present almost wholly devoted to matters of administrative routine.

Accordingly, we recommend that steps be taken to secure the necessary legislation to abolish the Board of Superintendents and the position of Associate City Superintendent; and that meanwhile a study be made by the Bureau of Investigation and Appraisal of the powers and duties now belonging to the City Superintendent, the Board of Superintendents, and the Associate City Superintendents, with a view to securing a more economical and efficient distribution of the necessary administrative powers among the City Superintendent, the proposed Supervisory Council, the District Superintendents, and the Principals.

Further, because at present the extent to which the participation of

members of the teaching and supervisory staff in the making of educational policies is wholly within the personal choice of the City Superintendent or the Board of Superintendents, and real progress within the school system demands that such participation be officially, that is, legally provided for, we recommend that steps be taken to establish a Supervisory Council. This council should consist of the City Superintendent, all the district superintendents, and a number of selected directors, principals of elementary schools, principals of high schools, the principals of the training schools, and representatives of the teaching staff in the different types and grades of schools; and that this Supervisory Council possess general powers of initiation and direction with respect to programs of study and all other matters relating to the aims, means, and methods of instruction.

Finally, because the fundamental importance of the inspectorial form of control has been recognized only to a very limited extent—the school system at present suffers from a lack of definite and detailed knowledge of its own working and its own cost; because even where recognized officials responsible for administrative or supervisory duty now appraise their own performances; because investigations to ascertain the facts needed for reaching satisfactory conclusions concerning educational results, and the confirmation or refutation of educational opinion within and without the school system are not now made at all, we recommend that there be established as an integral part of the school control a Bureau of Investigation and Appraisal. This bureau should be in charge of a chief or superintendent who is directly responsible to the Board of Education, and should be so organized as to enable it to serve as the central agency for gathering and interpreting statistical and other data with reference to the schools; and for making such investigations as are necessary for the internal development and extension of the work of the school system. Illustrations of the kind of investigations required have already been given.

### The Board of Examiners

The Board of Examiners consists of the City Superintendent, who is chairman of the board, and four persons nominated by him and approved by the Board of Education. Our study of the work of the Board of Examiners has caused us to reach the conclusion that this board has performed its duties in a decidedly successful manner. Its responsibilities are very great. While some unfit or partially unfit individuals have been declared eligible for appointment to service as teachers, and some fit individuals have not, nevertheless, considering the many and varied inherent difficulties of determining beforehand the fitness of individuals for effective service as teachers, and also the constant pressure from the many organized interests in the city to utilize appoint-

ments to teaching positions for narrow or selfish purposes, the courage, integrity, and skill of the Board of Examiners deserve general commendation.

So far as the written examinations in the so-called professional subjects are concerned (history and principles of education, psychology, general method, methods of teaching special subjects, and school management), it is apparent that while these examinations fairly test the position of systematized pedagogical knowledge, and the conditions and demands of schoolroom practice, there has not been a conscious effort to bring together the standards formulated by the Board of Examiners and the standards by which the success or failure of a teacher is determined by the supervisory staff. While, to some extent, this gap is lessened by the oral examinations, and in some instances by the practical tests, this gap will exist as long as the members of the Board of Examiners are, in the conduct of their work, completely isolated from the conditions and requirements of classroom teaching.

We find, further, that the range and variety of examinations now necessary are so large as to necessitate an increase in the present membership of the Board. A larger membership would permit further specialization of effort on the part of the members, and this is desirable for the maintenance of a high standard of efficiency.

We accordingly recommend that the Board of Examiners be reorganized so as to consist of nine members—including the City Superintendent of Schools to insure the necessary correlation between the actual work of the schools and the Board of Examiners; that the eight appointed members be divided into four equal groups; and that the members of each group be relieved, in turn, of their immediate duties as examiners for one year, and assigned to such work as would bring them into direct contact with the teaching staff of New York City or elsewhere.

This recommendation aims to secure six active members of the board during each year; to inhibit the recognized tendency of any examining body to become isolated from the situation under their control; and to permit the members of the board to study the needs of the schools in order to bring about a more effective relation between the formal examinations for licensing and the performances within the schools.

## **V. THE BOARD OF EDUCATION AND THE LOCAL SCHOOL BOARDS.**

### **The Board of Education**

Briefly stated, the Board of Education is responsible to the people for the general direction and control of an efficient public school system large enough and diversified enough to meet the diversified educational needs of the city. This responsibility is placed on it by the charter and the general education law of the state.



To discharge its responsibility satisfactorily, the legal functions of the Board of Education should be clearly defined; the members of the board should have a clear conception of the board's functions, including the relation of those functions to the functions of its staff of employees—business and educational; and its organization and procedure should be such as to enable it to discharge all its functions promptly, i. e., without unnecessary expenditure of time and effort; further, it should insist unequivocally on discharging the functions which undoubtedly belong to it; and it should render to the people a lucid and an adequate account of its stewardship. To organize and direct its policies and procedure the board should have a general manager or executive whose authority is commensurate with his responsibility for the work to be done.

We find that none of these conditions of satisfactory school administration by the Board of Education are adequately met; and that, in consequence, in addition to the natural difficulties which face the Board of Education in the performance of its duties, unnecessary or artificial difficulties exist, which make its enormous task almost impossible of accomplishment. The present condition of the board's affairs is due to an accumulation of ill-considered laws, and a service-defeating division of power and responsibility, which seriously endanger the educational welfare of the city. A reorganization of the present system of administration, including the financing of the school system, is accordingly imperative.

The Revised Charter (1061) declares that "there shall be in the City of New York as constituted by this act a Board of Education which shall have the management and control of the public school system of the city, subject to the general statutes of the state relating to public instruction and to the provisions of this act. . . . For the purposes of this chapter the Board of Education shall possess the powers and privileges of a corporation" (1062). "There shall be the following administrative departments in said city. . . . Department of Education" (96).

Is the board thus constituted a separate corporation or a department of the city government? The courts and the legislatures have repeatedly held that the "common school system is an institution of the state and not of any particular locality therein," and its officers are not local officers, but officers of the state system even when those officers are appointed by the mayor of a city. "Education is not a city, village, county, or town business. It is a matter belonging to the state government." "The city cannot rent, build, or buy a schoolhouse. It cannot employ or discharge a teacher. . . . All this results from the settled policy of the state from an early date to divorce the business of public education from all other municipal interests or business, and to take charge of it as a peculiar and separate function through agents of its own selection and immediately subject and responsive to its own control. . . . It is difficult to see how the mere listing of the Board of

Education among city departments makes any change in its corporate powers, duties, or liabilities. . . . It is still the sole representative of the school system with exclusive powers to control and administer all school property and school funds."

Further, the State Commissioner of Education, according to the Education Law of 1910, is the chief executive officer of the state system of education. He has authority to decide appeals brought to him from official acts of boards of education or school officers in cities or union free school districts.

All this is in entire accord with the growing tendency in other states as well as New York to separate public education from all other municipal functions and entrust it to independent corporate agencies of its own creation.

We find that the policy incorporated in the law and in court decisions cited in the report from which the foregoing quotations are taken is not now carried out either in its spirit or its letter. A counter-conception holds, namely, that the school system is essentially a subordinate city department. It has gradually come about that the Board of Education is not "the sole representative of the school system, with exclusive powers to control, manage, and administer all school property and school funds."

A conspicuous illustration (one of many that might be selected) of the difficulty of conducting the business of the school system according to present methods, and the legal uncertainty of present procedure, given in detail in the report, is found in the making of leases for school premises. Other illustrations are cited in the report.

The comptroller's staff may and does suggest changes in the estimates submitted by the Board of Education; the Board of Estimate and Apportionment may and does modify them; and the Board of Aldermen may then reduce them. Salary schedules for each division in the offices of the Board of Education are fixed, and the number of employees allowed is specified by the fiscal departments of the city. When a janitor is to be employed to care for a building, the Board of Education must ask the Board of Estimate and Apportionment to recommend that the Board of Aldermen fix his salary.

The Board of Education has felt the tendency of the Board of Estimate toward the centralization of municipal activities increasingly for some time. The board is now hampered and hindered by the continual necessity of asking the Board of Estimate to transfer money from one fund to another in order that it may meet the necessary readjustments that the school service requires.

Such administration takes the control of public education away from the Board of Education, and transfers it to other city boards and bodies. It leads to interference with the educational economy of the school system by municipal officers and bodies not responsible for its management. This departure from the settled policy of the state in keeping

the work of public education distinct from all other municipal interests and business would seem to require, as the Court of Appeals has said, express warrant in law "in language so clear that no doubt would arise as to this change of policy."

We accordingly recommend that the laws governing the Department of Education be codified; that the Board of Education employ a legal adviser of its own; that immediate steps be taken to secure from the courts an interpretation of such parts of the law as are not clear in order to fix definitely the responsibility of the Board of Education and all municipal boards and bodies for the administration of school affairs; and that the law be strictly followed.

In the matter of appropriations for school purposes, in general, we find that shortage of funds and insufficient control of funds in the hands of the Board of Education have affected every department of the school system, and hence that both the more careful preparation of estimates and the more careful consideration of them when made are required. Somehow or other, the Board of Education must educate the children. It is conducting an enterprise whose expansion and changing conditions are not subject to its volition. Its territory is so vast and changes within it are so rapid and so continuous that the Board must have a large degree of freedom as to the size of its funds and the control of its funds in order to meet its needs and make the readjustments required. This freedom it does not now possess. Estimates for school expenditures, however carefully based on data derived from past experience—as they should be—must therefore provide for a margin to cover the internal changes and the growth that cannot be foretold. But if the most careful statement of its needs that can be made is submitted by the Board of Education, and if this statement receives equally careful consideration by the tax-appropriating bodies, the inevitable friction between the tax-appropriating and the tax-consuming bodies will be reduced to the minimum.

We find, further, that the methods of accounting to the fiscal authorities now employed by the Board of Education require modification. Proper accounting is, of course, indispensable; but uniformity of accounting for different departments does not sufficiently take into account the great difference between the business to be transacted by the different departments. The present methods interfere too much with the prompt and effective discharge of educational business. Methods of advantage in other departments are almost inevitably disadvantageous in the department of education. In any event they should be introduced only after a thorough study of them has been made, and their practicality and effectiveness in promoting the transaction of the business of the Board of Education have been made clear.

The foregoing recommendations and suggestions are intended to provide immediate relief from the present situation. But for the perma-

nent and progressive development of the school system, the city will need new and important legislation. The many external hindrances to the efficiency of the school system can be removed only by making the school system independent of the city government. Education is not a function of society subordinate to government; it is a coördinate function.

Other cities and states have recognized the validity of the principle just stated and have acted on it. For example: In Pennsylvania the school code which went into effect Jan. 1, 1912, makes the School Board of Philadelphia (and other cities of the state) an independent taxing body, and gives it (and them) authority to make loans; the board controls its own funds, and is accountable directly to the people. In Indianapolis the Board of School Commissioners is a separate and distinct corporation. It has the power to make its own levies of tax up to a maximum of sixty-seven cents on the hundred dollars of taxables, and the statutes also give the board a bond-issuing power. The municipal government of a city, town, or village in Missouri has nothing whatever to do with school control. The boards of education of St. Louis and Kansas City are therefore independent bodies with tax-levying powers of their own, and full authority under the state law to do all things necessary to accomplish the purposes for which the schools exist.

We accordingly recommend that the established policy of New York state "to separate public education and the control and management of the schools from all other municipal interests and business" be carried out by making the Board of Education independent of the city government and giving it the power to determine the amount of money needed for school purposes.

Further, legislation is needed to secure a new kind of Board of Education. The present board is much too large. The trend in American cities in recent years is toward small boards of education. American cities have come to see that a large city must have a small board. The large board lacks unity, a clear conception of its functions, and definiteness, promptness, and energy in the performance of its duties; and non-progressive school administration is the inevitable result.

The defects of the large board are plainly seen in the record of the Board of Education of the City of New York. As a board "It has not come to close quarters with its work. It has trusted its committees to handle its business. It has no definite educational policy. It has not led in educational matters. It has not upheld the education law. It has not charged itself with the duty of striving to perfect the law. It has not fought for adequate appropriations for school purposes. It has not co-operated in the proper measure with the local school boards. It has not devised one system for the administration of its business, but several more or less unrelated systems. On the other hand, it has helped to pass 'the anti-merging bill,' which makes mandatory upon it and its successors the appointing of all candidates whose names are on the eligible list for

three years, no matter how many better qualified teachers are available."

Accordingly, we recommend that New York City take steps to secure a small unpaid Board of Education (by small, we mean five, seven, or nine members); and that the board systematize its work; and clearly separate its functions from those of its executive and technical staff. Such a board should not be paid, because that would cause the board to attempt to exercise executive and technical functions, and for the proper discharge of these functions the members of the board have neither the time nor the requisite technical knowledge and skill.

The Board of Education is a body of laymen—representatives of the people. As such their chief duty is to appoint a competent staff, retain them in office as long as they are competent, and hold them responsible for the executive and technical functions to be performed. The board does its work chiefly by requiring and hearing reports from its staff on work done or to be done, by deliberating on and criticising such reports, and by legislating on the work done or the measures proposed; and by rendering a clear and an adequate account of its activities to the people. One of the most important immediate duties devolving on such a board would be to study its own functions so as to enable it to distinguish clearly between those functions and the functions of its executive and technical staff. Until the board does recognize the difference between these functions real progress in the administration of school affairs is impossible.

Such a board (and the present board) should have a general manager to unify, energize, and direct the work under the general control of the board; and since this work has for its object the education of the children—for which every detail of the school system exists—the general manager should be the City Superintendent of Schools; and his authority should be commensurate with his real responsibilities.

At present neither the charter nor the by-laws of the board define the functions of the City Superintendent as they should. The work of the general offices is in a dismembered condition. Much business is now unnecessarily delayed and uneconomically handled as to expenditure of time and energy. As general manager of the whole educational enterprise the City Superintendent should make his office an administrative clearing house for all its activities. A great gain in the efficiency and dispatch with which matters are attended to would be the natural result.

A small board would have very few or no standing committees. The present board, like all large boards of education, transacts its business through committees. While most of the present committees are efficient as such, the members of them devoting much time and thought to their work, the transaction of business by the committees is nevertheless an important cause of the conspicuous inefficiency of the board. The committee system leads to a confusion of authority and action between the board and its committees, and between the committees themselves. Matters requiring decision by the committees must be referred and re-

referred; and differences of opinion on the part of committees may and do defer action indefinitely, or prevent it altogether. Whatever unity of action now obtains among the several committees is accidental, or is obtained by prolonged correspondence between them; and this means vexatious and service-impairing delays or even paralysis of the business of the system.

All this is due to a failure to distinguish between the general administrative control, which the Board of Education should exercise as a whole, and the detailed executive functions that should be delegated to its administrative and supervisory staff. Whenever the board charges one of its committees (or itself) with the details of executive or technical details, it attempts the impossible; and it loses sight of its own most important and vitally essential function, namely, that of deciding general policies and seeing that its deliberate judgments on those policies are effectively carried out by the staff. The staff, under the direction of the City Superintendent as coördinator and general manager of all the board's business, and not the committees of the board, have the time and should have the special qualifications required for carrying out the decisions reached by the board. That is what the staff is for.

Accordingly, we recommend that the Board of Education confine itself to the general direction and control of the school system; that the board recognize the necessity of becoming acquainted with its work as a whole, and of employing the informed and deliberate judgment of the whole body to conduct its business; that it turn over all executive and technical functions to its staff, under the unifying leadership of the City Superintendent as the board's general manager or chief executive; and that the work of committees, if committees are found necessary, should be limited to the preparation of business for the board's consideration.

Further, to prevent needless and business-obstructing jealousy of function between the board and its general manager, and to make his position on all official acts a matter of record, we recommend that the City Superintendent be *ex officio* a member of the Board of Education. Precedents for making the chief executive a member of governing boards of educational institutions are found in the management of American universities; and the causes which led to such action are altogether similar to those now prevailing in the administration of city school systems.

Finally, in view of the fundamental importance of the reorganization of the administrative system of the Department of Education outlined above, we recommend that the Bureau of Investigation and Appraisal carefully follow up the working of this reorganization if it be adopted, or in so far as it may be adopted, so that a foundation for progressive improvement may be laid in well authenticated, recorded, and organized experience.

### The Local School Boards

The list of duties to be performed by each of the forty-six local school boards is extensive. Some of them rightfully belong to a board of laymen such as the local boards are; some of them ought not to be assigned to such boards, they belong to the executive and supervisory staff. We accordingly recommend, first of all, a revision of the duties of the local boards with a view to eliminating the confusion arising from the assignment of duties to the local boards that should be assigned to the staff, and for which the staff should be held responsible.

We find that while a few local boards take their duties seriously, and are really helpful to the schools of their districts, at present these boards, on the whole, render little real service. The principal reasons given by local board members for the feebleness of the local boards are that the local boards have responsibility, but no authority, together with the paralyzing discontent growing out of such a situation; and the failure of the Board of Education actively to encourage the coöperation of the local boards.

The first of these reasons does not seem to us valid. The authority of the local boards ought not to be increased. Nothing could be worse for the school system than to have the authority for school administration dispersed throughout the forty-six districts. Their functions are the functions of lay visitors officially designated to keep the people of their several districts in touch with the schools. As such, they not only visit and report to the Board of Education on what they see in the schools; they are also, or should be, the watchful lay guardians of the educational interests of the people. In this great city the Board of Education is too remote from the local neighborhoods to keep well informed concerning the response the schools actually make to the people's needs as seen by the people. This information the local boards should get, and after thorough deliberation transmit to the board. The local board may and should keep in personal touch with the teachers, supervisory officers, and parents of their respective neighborhoods, and thus supply a valuable local watchfulness and support to all concerned. They should not themselves attempt to interfere with administration, supervision, or classroom work, but they should convey their views, as laymen, to the proper officials, or to the Board of Education, or both. Their real functions should therefore be definitely recommendatory, not administrative. For the adequate discharge of these functions no more authority is required than they already possess. Rather, as has been pointed out already, some of the duties now devolving on them should not be assigned to them; and a revision of their duties should be made with a view to relieving the local boards of such duties and assigning them to the executive and supervisory staff—where they belong.

As to the second reason given for the inefficiency of the local boards,

it seems clear that, unless the Board of Education actively encourages the coöperation of the local boards, no helpful coöperation can be expected. There is no doubt that the Board of Education as a board has not concerned itself much with the local boards. So far as the records furnished us go, they show that wherever the member of the Board of Education who is a member of a local board is faithful and active as a local board member, the local board does render a real service to its district. But such instances of active membership in a local board by a member of the Board of Education are not common. If some one officer in the general offices were charged with working out the details of a plan of helpful coöperation with the local boards, including regular reports on their work, a useful scheme of mutual helpfulness would result. We accordingly recommend that the legal duties of the local school boards be revised in such a way as to make their chief duty that of visiting and inspecting the schools, and developing the interest of the community in them; and that the Board of Education do everything in its power to make them an integral part of the organized school service.

From the foregoing, it is clear that in spite of the progress the public school system of New York City has made since the consolidation, it is seriously defective. It needs thorough reorganization in respect to its administration by the Board of Education and the supervisory staff; and in respect to its general system of supervision. The Board of Education needs a clear conception of its functions, and should come to close quarters with its work. In the general system of supervision, helpful coöperation under leadership should replace bureaucratic control. The Board of Superintendents fulfils no useful function, and should be abolished. The Board of Examiners is decidedly efficient, but needs reorganization to improve and maintain its efficiency. The quality of the teaching in the elementary schools, at least, is, in general, not good. The courses of study for elementary schools and for high schools need thoroughgoing revision, and flexibility should replace rigidity in their administration. Provision for the discovery, segregation, and treatment of mentally defective children is inadequate and unsatisfactory. The compulsory attendance service is inefficient; it emphasizes police functions rather than preventive measures, and the staff needs reorganization on a functional basis. The recognized advantages of intermediate schools in relieving congestion have not led to the further establishment of such schools, and no attempt has been made to realize the exceptional educational opportunities these schools afford; promotions and non-promotions are not studied so as to yield a real basis for a maximum rate of promotion; part-time classes should be abolished; the estimated need of teachers for elementary schools and for high schools is not based on indisputable and well-organized data. The provision for industrial education is so meager as to be almost negligible; neither industrial nor commercial education is so maintained as to secure



the necessary effective coöperation of industry and commerce, and co-operative and continuation schools are wholly absent. Habitual self-scrutiny and an appeal to well-conducted investigations and experiments to secure the necessary data to confirm or refute educational opinion and furnish the regulative for all the activities of the school system and for its adequate financial support are lacking.



## **THE QUALITY OF CLASSROOM INSTRUCTION**



**CORRESPONDENCE BETWEEN THE COMMITTEE ON SCHOOL  
INQUIRY, AND PROF. PAUL H. HANUS AND PROF. FRANK  
M. McMURRY, RELATING TO PROF. McMURRY'S REPORT.**

**Letter from the Chairman of the Committee on School Inquiry to Prof. Frank  
M. McMurry proffering questions.**

AUGUST 13, 1912.

DEAR SIR:—The Committee on School Inquiry, after reading the galley proof of your report rendered to it, feels that the report might be strengthened in certain particulars as to which it desires to offer you the following suggestions with the request that you supplement the report as indicated. If you are able to amend and supplement the report as desired, the Committee requests that you be good enough to forward to it typewritten amendments to the galley proof now in hand, which the Committee will then transmit to the printer for new galley.

*In re report upon class room instruction.*

1. Would it not be desirable to state the number of specialists assisting, their qualifications, preparation for the investigation (especially the directions given them) and other information concerning them that would give a basis for judging their qualifications for the several tasks assigned them?

2. Would it not be desirable to give a statistical summary of the schools, kindergartens, pupils, teachers, age, sex, grades, classes, subjects, etc., visited by you and the same for those visited by your assistants, together with statements of time spent in the various classes during such investigation? In the judgment of the Committee, a statement of the above facts will forestall a questioning of the basis for certain conclusions drawn.

3. Will you please state whether the working theory for the elementary schools as described by you is the expression of opinions of teachers and principals, or is it the expression of opinions to you by those in charge of supervision of instruction?

4. The Committee would like to have an expression of your opinion as to the worth of such tests of efficiency of teachers as those applied by Courtis.

5. In the discussion (galley 209) of the attitude of teachers, it would appear desirable to state, in connection with each of the alleged opinions held by them concerning their own status and the conditions under which they work, the number of teachers expressing such opinion.

6. Would it not be desirable to define more clearly the status of the class room teacher (galley 209), how much liberty she should have, in what respect and to what degree it should be prescribed?

7. Would it not be desirable to discuss more fully the grounds for the recommendation that unruly pupils be sent to specified schools where they may receive corporal punishment?

*In re report on course of study*

1. Would you recommend that there be a curriculum and syllabi of any kind for the kindergarten?

2. In the opinion of the Committee, it would be desirable to give selections from a course of study and from a syllabus that meet with your tests, so the readers of your report may the better appreciate, through illustration, your meaning when you say, as on page 213, that "the syllabus suggests uniformity in detailed practice," and when you say, as on page 215, "the curriculum and syllabus fail in omitting extensive and helpful suggestions."

3. Will you state what reasons there are against using other material for composition than is used for the study of literature (see paragraph 5, galley 214).

4. The Committee believes that you should state whether you found any evidence that the syllabus emphasized minor details because of the general failure of pupils with respect to those details, and, if so, what that evidence is. (For example, paragraph 6, galley 212.)

5. Will you specify how the law in regard to temperance instruction makes it difficult to plan a well organized course of study (galley 227)?

6. The Committee considers that it would be desirable for you to state, together with your reasons therefor, whether the greater fault of the curriculum and syllabus of the New York elementary schools lies in the material of the curriculum and course of study, or in their administration.

7. Do you contend that most teachers can teach technical grammar in connection with literature without having the instruction in grammar impair the literary effect upon the pupil of the production under consideration?

8. Do you contend that a sufficient knowledge of technical grammar can be obtained in that way to serve in the study of foreign languages?

9. The Committee believes that you should state whether you have found that, in general, those teachers and principals who have been given latitude to formulate their courses of study have adapted those studies to the needs of their communities. The Committee would like a statement of the facts of your experience in this connection.

10. When investigation and experience have shown that fifty per cent. of the pupils in the upper grades of the schools have come from other schools, and that fifty per cent. of those in the lower grades of the school will be in other schools before they complete the upper grades,

do you believe that such pupils can profit through an arrangement by which the school has a curriculum made up as recommended in galley 230?

11. Would it not be desirable to state at length the reasons why a single curriculum could not be so made as to be adaptable to the needs of individual pupils as well as to individual schools (galley 230)?

Please be good enough to let me know by return mail how soon I may expect from you the material requested.

Respectfully,

JOHN PURROY MITCHEL,

*Chairman, Committee on School Inquiry.*

DR. FRANK McMURRY,

*Teachers' College, Columbia University,  
Cambridge, Mass.*

**Letter from Prof. Frank M. McMurry answering the letter of the Chairman of the Committee on School Inquiry proffering questions.**

TRUMANSBURG, N. Y., LAKE CAYUGA,

AUGUST 26, 1912.

MR. JOHN P. MITCHEL,

*New York City.*

DEAR MR. MITCHEL:—On receiving your suggestions about additions to my report in regard to the schools I wrote out a brief statement in regard to each item and forwarded the same to Prof. Hanus, as chairman of Committee. No doubt you have already heard from him in regard to the matter.

Yours truly,

F. M. McMURRY.



**Reply of Prof. Frank M. McMurry to the letter of the Chairman of the Committee on School Inquiry, dated August 13, 1912.**

*I. My Report on Class Room Instruction*

1 and 2. (e. Worthy of consideration). I have already met this suggestion as far as seems to me advisable by adding a note to my original paper. \* \* \*

3. (a. & b. Partly covered in report, but confusing.) The working theory referred to is gathered from many sources, being caught in conversation with teachers and principals, being observed in the curriculum also, etc. The question is an odd one at best, since principals are themselves in charge of supervision of instruction, although they seem to be here contrasted with those in charge of it!

4. (a. Immaterial.) I am inclined to value the Courtis tests highly, although I have not familiarized myself with them enough to feel secure in my judgment.

5. (a. Immaterial, *number* merely being a minor matter here.) The question, or suggestion, would hardly have been raised had the Parts II and III of my report been kept in mind, for the matter is not mainly decided by the mere *number* of teachers expressing such opinions.

a. Lack of authority to punish is discussed later somewhat; but there is no question about the lack, since punishment is expressly forbidden, *by rule*.

b. The lack of freedom among teachers, so far as the curriculum and syllabi are concerned, is most clearly revealed in the latter.

c. And the lack of leadership is most clearly shown in the character of supervision. The main test of their statements of discontent is found in Part II and III of my report. I have not attempted to keep an exact copy of answers on such matters; but I have attempted to see whether or not such complaints prevailed, and, what is more important, whether or not they seemed justified.

6. (c. Already answered or covered.) I have done this in numerous ways in my Parts II and III. It would be very unwise to introduce such matter at this point, since it does not belong here at all.

7. (e. Worthy of careful consideration.) We considered this matter several times. I have made a much more extensive study of the topic than was shown in my original report: same is now in printer's hands.

## II. *My Report on Course of Study*

1. (c. Already answered or covered.) Yes; not one uniform course; but one adapted to each kindergarten, as in case of elementary schools.

2. (c. Already covered, at least in part.) My report throughout contains many constructive criticisms, many of which exactly meet this suggestion.

3. (b. Confusing.) The value of correlation of studies has been so extensively discussed during the last twenty-five years that it seems to me inadvisable to argue here in its favor. Such matter must be assumed.

4. (b. Confusing.) If children did show weakness in details, the remedy could never be to propose a curriculum composed mainly of details. That remedy would tend to produce the defect, rather than to cure it. Hence, I am not interested in this point. The point is crude.

5. (Confusing.) In writing my report I have been compelled to presuppose some knowledge of education. I have assumed, for instance, that a course on temperance, prescribed largely as to time and content, *without reference to child nature and to other parts of the curriculum*, would make it difficult to plan a well organized course. If this is not self-evident, it would require a whole course in education to make it evident I am afraid.

6. (b. Confusing.) Both the curriculum and supervision are bad. Which is the more at fault I could not easily say. Neither can be very effective, unless the other is reasonably good.

7 and 8. (b. Confusing.) I have opposed teaching technical grammar, as a separate subject, or a science. My suggestion is that most teachers could teach the few points needed in literature in connection with it far more advantageously than they now teach them.

One of the objects of studying foreign languages is to learn grammar—so very many say. I am not “contending” anything on point 8.

9. (b. Confusing.) If reference is made here to New York City my answer is that such latitude has not been given. If reference is made to other places, the answer is, probably, more often “no” than “yes.” But the point is, not that people should be given latitude to adapt their subject matter to pupils; but that they should have pressure put upon them to do it. Then we would secure it much more often.

10. (a. Immaterial.) Yes.

11. (d. Require much further investigation and study.) I am not quite sure what this means. For instance, I do not know whether “single” here means “uniform” or not. I have argued this question very briefly. But it is a very large question, and one that would require very extensive treatment, if thoroughly discussed. By making a definite recommendation on the matter I wanted to pave the way for a general discussion along this line.

**Classification of the questions from Mr. Mitchel's letter of August 13, 1912, supplied by Professor McMurry at the request of Professor Paul H. Hanus.**

a. Immaterial.....	3	..1..	Part I, McMurray's report.		
		2			
		7			
b. Confusing.....	7	..3..	Part I,	"	"
		3			
		4			
		5			
		6..	Part II,	"	"
		7			
		8			
c. Already answered or covered.....	3	..6..	Part I,	"	"
		1..	Part II,	"	"
		2			
d. Requiring further investigation, etc.	1	11..	Part II,	"	"
e. Worthy of consideration.....	3	..1..	Part I,	"	"
		2			
		7			



REPORT ON  
EDUCATIONAL ASPECTS OF THE  
PUBLIC SCHOOL SYSTEM

OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY  
OF THE BOARD OF ESTIMATE  
AND APPORTIONMENT

PART II

*Subdivision I*

*Elementary Schools*

SECTION A.—THE QUALITY OF CLASSROOM INSTRUCTION

SECTION B.—THE COURSE OF STUDY

SECTION C.—THE SUPERVISION BY THE PRINCIPALS

BY

FRANK M. McMURRY, PH.D.

Professor of Elementary Education, Teachers College, Columbia University

CITY OF NEW YORK

1911-1912



## TABLE OF CONTENTS

A. Standards	Page
Inadequacy of customary knowledge tests, as basis for judging instruction . . . . .	211
Relation of the desired basis to the aims of the instruction . . .	212
Where the aims of instruction must be found . . . . .	212
Standards used in this investigation . . . . .	213
1. The purposes inculcated in pupils . . . . .	213
2. Consideration of values . . . . .	215
3. Attention to organization . . . . .	216
4. Exercise of initiative by pupils . . . . .	217
Value of these standards as tests of habits formed . . . . .	218
Value of these standards as tests of thoroughness of knowledge	218
Their value as tests of instruction in the three R's . . . . .	219
Their value as sources of suggestion for improvement . . . .	220
Their relation to the curriculum . . . . .	221
B. Method of Applying These Standards	
1. Two planes of instruction . . . . .	222
a. Instruction on the higher plane . . . . .	222
b. Instruction on the lower plane . . . . .	222
2. Use of these planes in judging instruction . . . . .	222
3. Judging instruction in terms of activity shown by the pupils	223
C. Application of These Standards	
1. To particular recitations observed . . . . .	224
a. Newspaper recitation in grade 6 . . . . .	224
b. Literature recitation in grade 5 . . . . .	226
c. A first grade recitation in reading . . . . .	227
d. Construction of a chair with blocks in kindergarten . .	228
e. Construction, in kindergarten—arranging and pasting of pictures . . . . .	230
f. A lesson in shop work in grade 7B . . . . .	231
g. A lesson in drawing in grade 8A . . . . .	233
h. Arithmetic lesson in grade 1A . . . . .	237
i. Arithmetic lesson in grade 8B . . . . .	237
j. A series of lessons in music . . . . .	239
k. Physical training—typical lessons . . . . .	241
l. Hygiene—typical lessons . . . . .	243
2. Application of these standards to kindergarten and ele- mentary instruction throughout New York City	
Method of judging reliability of conclusions . . . . .	245
Quality of instruction in the kindergarten . . . . .	246
a. Inculcation of purposes in children . . . . .	246
b. Attention to organization . . . . .	247

	Page
C. Application of These Standards (Con'd)	
2. Application of these standards to kindergarten and elementary instruction throughout New York City (Con'd)	
c. Attention to relative values . . . . .	247
d. Provision for exercise of initiative and independence by children . . . . .	248
Quality of instruction in the elementary schools	
a. The New York City working theory for the elementary schools . . . . .	249
b. Effect of instruction on children's purposes . . . . .	250
c. Effect of instruction on children's organization of ideas . . . . .	250
d. Effect of instruction on children's weighing of values . . . . .	251
e. Effect of instruction on children's initiative and self-reliance in general . . . . .	252
f. Conclusions in regard to quality of instruction in elementary schools . . . . .	252
Attitude of teachers . . . . .	253
D. Recommendations	
1. On unification of kindergarten and primary school . . . . .	254
2. On limiting the tendency toward uniformity . . . . .	255
3. On the status of the classroom teacher . . . . .	255
4. On discipline of unruly children . . . . .	256
5. On the aims of the elementary school . . . . .	259



# THE QUALITY OF CLASSROOM INSTRUCTION

---

## Quality of Instruction in the New York City Kindergartens and Elementary Public Schools <sup>1</sup>

### I

#### A. Standards

##### **Inadequacy of Customary Knowledge Tests as Basis for Judging Instruction**

It is customary to judge the quality of instruction by direct examination of children in subject matter. For instance, they are asked to state the causes of the Revolutionary War; to tell who is now Vice-President of the United States; to name and locate the capitals of California and Kansas; and to make an outline drawing of South America. If most of such questions are correctly answered, the instruction is called good; if not, it is rated as poor.

We agree, of course, that the acquisition of knowledge is one of the prominent aims of the school, and that it should be considered in any careful investigation of instruction. But such a test, as the sole or principal basis for judging instruction, has seemed to us so inadequate that we have rejected it, and for several reasons.

In the first place, the results depend too much upon accidental conditions, like recency of review of the particular facts called for, or freedom from embarrassment or excitement.

In the second place, the customary examination is too superficial and narrow a test of knowledge. It is superficial because the good memory, which enables one to reproduce facts, whether they have been digested or not, is too much at a premium; it often allows the thoughtless child to lead the class. And it is narrow because the subject matter of

<sup>1</sup> Attention is called to the fact that no attempt is made here to pass judgment upon the entire work of the kindergartens and elementary schools. The topic under investigation is the *quality of instruction* alone. There are aims of the school not fully included in the aims of its teaching, and there are important means for their accomplishment besides instruction, such, for example, as the personal influence of the teacher. The investigation has been thus limited, with the idea that, if this one broad topic were properly treated, more would be accomplished, considering the time and energy at our disposal, than if the entire field were covered.

Twelve persons have shared actively in the collection of data on which this portion of the report is based, visiting at least sixty schools in the boroughs of Manhattan, the Bronx, Brooklyn and Queens. Altogether not less than three hundred recitations were seen, in the majority of which the observation covered all or most of the period. In addition, many teachers and principals (not less than one hundred, in all) have been consulted at length as to the quality of the instruction, and the conditions determining it.

the studies is by no means all that one needs to know. Indeed it is probable that knowledge of right methods of work is even more important. Certainly many an enlightened professor in college is more interested in giving his students an understanding of the proper method of studying his subject than a knowledge of its subject matter; and proper control of method is even more worthy of attention in the elementary school, because habits of procedure are, in the main, acquired there by the great majority of our population.

In the third place, even if the customary examinations fairly tested the understanding of facts, such understanding is still only one of the principal things expected from instruction, and not the most important. Indeed, there are several things above and beyond knowledge which should result from instruction; and the latter does or does not include these according to its degree of excellence. Partly because the customary examinations fail to give information about these higher effects of teaching, they have been rejected as a standard.

Finally, such tests are unsatisfactory because they do little beyond revealing the present status. This investigation has not been undertaken solely with the idea of discovering present conditions. It has been undertaken with the additional purpose, if changes were needed, of pointing out ways in which improvements might best be effected. For that reason, also, it was important that standards for judging instruction be chosen that, while showing how good or poor the instruction now is, should at the same time suggest the directions that further progress might take.

### **Relation of the Desired Basis to the Aims of the Instruction**

What standards, then, should be set up? The customary examinations do, at least, give one suggestion. Knowledge has so often been taken as the standard of worth simply because it is one of the purposes of instruction, although not the most prominent. This suggests that purposes, in any field, should be the standards of value in that field; this is a suggestion that seems to us to hold, in general, and one that has been of great importance throughout this investigation.

The leading purposes of instruction, therefore, must form the basis for judging its quality; instruction that accomplishes these aims fairly well is of a high order; that which does not accomplish them at all, or very poorly, is of a low order.

### **Where the Aims of Instruction Must Be Found**

It is not easy to state the main objects of teaching. But since they are commonly supposed to include such a control of themselves and of the world's resources by pupils as will make them high-minded, resourceful, and generally efficient participators in the world's affairs, the more

immediate purposes of instruction must be found among the leading things necessary for proper daily living. That is, we must look directly to the life about us to find what subject matter the school should offer, and how this should be treated. Its curriculum will be good to the extent that it contains problems—mental, moral, æsthetic, and economic—that are socially vital and yet within the pupils' appreciation; and its method of presenting that curriculum will be good to the extent that it exemplifies the methods of solving problems found most effective by the world's most intelligent workers.

This proposition is, possibly, the most debatable one that we have to offer on the question of standards. For many schools, that *seem* to accept character as their final aim, tend strongly to eschew any close relation between instruction and daily living.

We are convinced, however, that much of the present dissatisfaction with the schools, particularly complaint about waste, is due to want of this relationship. We are also convinced that, in taking this position with reference to the elementary school, we are expressing the best modern educational thought.

### Standards Used in This Investigation

Any list of the main elements in daily living that might be taken as standards in judging instruction would vary somewhat in length and quality according to the individual who made it. Yet such lists would duplicate each other to a great extent, because there are certain things that are common essentials to every person's welfare. The following four factors, because of their universality, are particularly worthy of acceptance as aims of school instruction. And while others could easily be added, these few seem to us sufficient in quality and scope to test the general effectiveness of the teaching.

#### 1. The Purposes Inculcated in Pupils

One of these factors is *motive*. One of the great differences between efficient and inefficient men is found in the purposes that move them. The quality of a man's aims chiefly determines the quality of his character; their variety determines his breadth; and their intensity his energy of thought (including imagination), feeling, and action. Purposes bear the same relation to efficiency among young people as among men. One of the primary responsibilities of instruction, therefore, should be to lead pupils to *want* to know, to do, and to be.

This is necessary, first of all, for present conduct. If children behave badly in the street, or if they are lazy, the school is questioned. That is, the public holds the school responsible for developing character *now*, while the pupil is still young. But it is necessary for the future, also. In particular, the time will come when the pupil must choose his voca-

tion. If he has no ardent desires, no plans, his selection must be blindly made. On the other hand, if his ambitions have increased and improved along with his knowledge, a way has been prepared to meet this crisis, and his choice is far more likely to be intelligent and confident.

Instruction cannot, therefore, rest satisfied with cold facts alone. Its quality is to be measured, partly, by its provision for growth in motive. One object of teaching a pupil how to keep the skin healthy should be to arouse a desire on his part to practice the rules of health thus learned. One object of teaching him to play games should be to make him want to learn more games, even throughout life. One object of teaching the Crusades in history might well be, by showing how superficial the causes were, and how much the warfare cost, to influence the youth's attitude toward the present movement for arbitration. One object of teaching about John Hampton is to lead pupils to determine to imitate him. One object of teaching the geography of Germany is, by showing how closely she is shut in by neighbors, to make pupils watchful for magazine and newspaper articles touching the German attitude toward war and her preparation for it.

Such an outcome from instruction cannot be left to chance. It must be secured by careful planning, and in two respects: First, a curriculum must be selected that is near enough to the child's interests to be capable of nourishing ambitions. Not every large topic can be of this nature, but every study can be expected to contain many large topics that have the power of arousing specific hopes for the future.

After such a curriculum has been secured, much depends upon the method of its presentation. An instructor in literature in a certain seventh grade, after having brought her class to a fair understanding of Browning's short poem, "The Patriot," raised the question, "Are we now through with this selection?" The pupils looked somewhat surprised, having supposed that their full duty was performed. But, seeing that more was expected, they replied, after some hesitation, "We might read it again." Also "We might memorize it." They were endeavoring to satisfy the teacher rather than to express any plan that had appealed to them.

Yet the poem might, without difficulty, have been so presented that the children would have replied with some enthusiasm: "I want to come back to this, particularly to enjoy the first two stanzas in contrast with the fourth and fifth; I want to see whether such a quick change of fortune often happens in real life; also to see whether the fault, in such cases, lies with the man himself or with the people." The teacher possessed the skill necessary to secure such responses; but there was little evidence that she had planned for them. Thus definite planning and some skill, both in the making of the curriculum and in its presentation, are required, in order to inculcate purposes properly, or to meet this first test of the quality of instruction.

## 2. Consideration of Values

A second extremely important factor in daily living is the weighing of values. Worth is one of the most common and necessary ideas in adult life. Any business man will illustrate this fact in five minutes of conversation. In any field of experience there are usually facts, ideas, and projects of varying value, and excellence in distinguishing their relative merits is a kind of excellence that every one requires; it is based on a study of causes or reasons and is synonymous with good sense, or wisdom. It is important to keep in mind that good judgment mainly signifies proper appreciation of relative values.

Considerations of worth are approximately as common and necessary among children as among adults. They judge the merits of teachers and the justice of treatment from both teachers and parents quite freely, whether we like it or not. They must often judge when it is safe to cross a street, what wrap they shall wear, what games it is best to play, what treatment they shall accept from their mates, and what kinds of reading matter they shall select. In all such cases they can blunder by overestimating minor matters, or they can show wisdom. Preparation for both their present and their future lives requires, therefore, that they be constant students of the worth of things.

This makes a study of values a prominent part of school instruction. All school branches contain facts of varying degrees of importance. Many names in history, many dates, many places in geography, many words that one might learn to spell, are insignificant, and should be slighted. Other names, dates, and places, etc., are vital and should receive emphasis. Since it is one of the main needs of children to distinguish between these two classes of facts, one of the main duties of teachers is to help them do this. By omitting it there are bound to be much waste of time and much misunderstanding of subjects; and by including it a close relation is established between instruction and growth in good judgment.

Provision for this selective habit in study again concerns both curriculum and method. Just as new truths can be understood only through related truths already known, so new values can be appreciated only on the basis of related old values. Therefore, the topics in the curriculum must be near enough to things that are dear to the pupil for him to feel their worth. If a seventh-grade class in history were asked to point to the most important paragraph in a chapter telling about the United States bank, they would have to choose at random, for the topic is too foreign to them to awaken feelings of appreciation. Or, if they were frank, and were asked to state what they most valued in that chapter, they might reply, "Nothing at all." That answer would express their attitude toward many other topics often included in school curricula. All that can be done by them in many such cases is to try to understand

whatever is stated, and memorize it passively, omitting all considerations of value.

But after only suitable subject matter has been selected, much still depends upon method. Good method will ever keep pupils alert to values. For example, some parts of most stories being more important than others, and some errors made by children being more worthy of correction than others, pupils even in the lower grades should be led to consider which are the more significant, with much emphasis on reasons. Most pupils will distribute their time somewhat equally over a given list of words for spelling, unless they are taught to pick out the few that they do not know how to spell, and to concentrate upon them. They will do the same in learning the multiplication tables, and in solving series of problems in arithmetic, unless taught to select in accordance with their individual needs. There should be few recitations in history, geography, literature, or any other subject in which the varying values of facts and tasks are not distinguished.

### 3. Attention to Organization

A third factor of special importance in daily life is organization of ideas, or system—reasoning. How essential this is to success in adult undertakings of all sorts every one knows. No subject is mastered until the relation of its parts to one another is determined, until the facts bearing on each phase are separately grouped, and until enough such facts are collected to give fair support to each controlling thought. Good organization of ideas means all this; it signifies such order and completeness as will assure thoroughness or fullness of comprehension and consequent force in presentation.

The need of organization of facts and ideas by children for the accomplishment of their purposes has received little attention, although we know that scattered thinking is a common enough cause of failure among them. But the importance of orderliness of thought in later life is so generally recognized, that few people hesitate to place responsibility for careful training of children in this respect upon the school, from the kindergarten on.

The school curriculum meets this responsibility to some extent by making the organization of ideas a prominent part of the study called composition; sequence—causal or otherwise—and grouping are there emphasized. But to depend upon that subject alone for securing systematic thinking would be much like depending upon grammar alone to secure correct English. Accordingly the degree of organization of the subject matter in *each* study must be scrutinized, particularly the extent to which each topic is a well-rounded whole, having a central idea that is strongly supported by subordinate facts brought into close sequence. Many curricula give the impression of being composed largely of detached facts.

The teacher's method of presenting facts in class and the kind of response that she accepts from pupils also have great influence on habits of organization. In a certain geography class a teacher, by actual count, put 18 questions in two minutes, a rate which seemed to be habitual with her. That meant approximately 360 questions in a period of 40 minutes. Of course, in such a case as that, each question can scarcely call for more than a single fact, and each reply must be very brief, usually only a fragment of a sentence. Also, in geography in particular it indicates utter neglect of causal sequence. Yet that kind of recitation is not uncommon, and its influence is directly destructive of any tendency toward system.

The scope of a teacher's questions is therefore worthy of close observation in judging the quality of her work; likewise the fullness of the pupils' answers. Broad questions indicate a grouping of the facts in the teacher's mind, and if they are well worded they signify much care in that respect. But even where such questions are put there is a tendency, both in school and college, to accept any lame answer that is correct, without reference to the arrangement of ideas and their forceful presentation. Here is a test of good teaching. Correctness of statement alone is far from sufficient. The answer should be as broad as the question; and it should be quite common, rather than unusual, for a pupil to talk one, two, or three minutes in order to make an effective reply.

#### 4. Exercise of Initiative by Pupils

A fourth factor in daily life that ranks with those already named is power of initiative. In the world at large possibly the most highly valued quality of character is self-reliance, *i. e.*, the ability to act as a leader whether in one's own affairs or in the affairs of others. Every intelligent parent desires to see a good degree of independence developed in his child.

The relation of this power to school instruction is not difficult to discern. Children can be furnished with desirable aims by the teacher; they can also pass judgments about values and organize their facts, doing it all entirely under the teacher's direct stimulus. Or they can do these things and the many others that are necessary in school partly or largely under their own direction. Since they *must* do all of these finally alone, and since they are *supposed* to do many of them alone, even as young children, when they study alone, it follows that the school in particular is the institution that should cultivate in them the power of self-direction.

This quality, like some of the others already mentioned, requires a curriculum intimately related to the child's experiences; for the self-confidence and energy necessary for its exercise are wanting when subject matter is too difficult of comprehension or is foreign to one's interests.

Good teaching never lacks relation to initiative. In all instruction some one must determine the work to be undertaken, must ask questions, and must accept or modify answers. In such tasks the teacher can assume full leadership, making all the plans and deciding when each has been executed; or she can accustom pupils from the kindergarten on to sharing this responsibility, until in the higher grades they can bear a good portion of it. Almost every recitation will reveal her attitude in this matter, and the procedure that she adopts with regard to it will be one of the best single tests of the worth of her instruction.

### **Value of These Standards as Tests of Habits Formed**

The relation of these four standards to habit is one proof of their significance as tests of teaching. Conduct is often defined as a bundle of habits; and since good conduct and purposeful activity are the aim of the school, it is not surprising that Superintendent Maxwell has laid so great emphasis on habit formation in recent years. The value of school government is largely measured by the extent to which it influences such habits as punctuality, regularity, and neatness.

It is the duty of instruction to supplement good school government by inculcating other habits more intimately connected with the acquisition and use of ideas. And instruction is always exerting a strong influence in this direction whether the teacher is conscious of it or not; always inculcating either good or bad ways of using the mind. It may easily accustom young people to working in a listless way, without reference to the comparative values of ideas, on scattered facts entirely, and in helpless dependence on the teacher. Or it may habituate them to the opposite ways of working. And, according as it does the one or the other, it allows waste without limit, resulting in general inefficiency, or leads to great economy and consequent efficiency. A test, therefore, of the principal habits instruction is inculcating is one of the most effective means of determining its quality.

In this respect the above-presented standards show peculiar merit. They center attention directly on the leading habits of thinking that pupils are forming, particularly the habits touching motive, value, system, and independence. And while there are worthy habits not here included, these standards, by measuring what the children themselves are accomplishing along these few lines, afford an estimate of the influence of their instruction on their habit formation in general.

### **Value of These Standards as Tests of Thoroughness of Knowledge**

In any attempt to organize ideas one is primarily concerned with the relations that those ideas bear to one another. They must be grouped and arranged in sequence in accordance with their inner connections; and the excellence of the organization is directly proportionate to the full-



ness of insight into these relations. Careful attention to organization is, therefore, one important means by which fullness of insight, or thoroughness of comprehension—in the scholar's sense—shall be attained.

Attempts to distinguish the varying values of facts show a desire to go beyond the mere connections that they have with one another, and to consider their bearings on human affairs. The reason that some things deserve to be slighted is that they have little to do with our interests; and the reason that others deserve to be emphasized is that they are vital to us. Careful attention to relative values, therefore, gives assurance of an additional kind of insight or degree of thoroughness; not the kind that the scholar, as such, requires, but the kind that any one needs who expects finally to make use of his knowledge.

The requirement that instruction should exert an influence on hopes and purposes carries this latter insight a step further by individualizing it. It is the particular pupil, each time, whose hopes and ambitions are to be affected, and if that is to be accomplished he must see the peculiar bearings of the instruction—whether theoretical or practical—upon his own career. In this case the insight must be so thorough as to lead to some degree of feeling and volition.

Finally, the demand that instruction assume responsibility for the exercise of the pupil's initiative aims at an insight that will allow one to go still further; and to *use* knowledge. Up to this point knowledge is only comparatively thorough, because it is theoretical. But the exercise of initiative involves, to a considerable degree, the independent use of knowledge, and, therefore, control over it, and thus it greatly increases the degree of thoroughness.

Every one knows that the word knowledge is used in many senses, signifying different degrees of thoroughness. The four standards that have been proposed test four of these degrees, beginning with the thoroughness of the scholar—which really insures only information—and ending with the *use* of knowledge, which insures *control* of information, a far higher degree of thoroughness.

### Their Value as Tests of Instruction in the Three R's

But what about their value as tests of the three R's and spelling? It may be admitted that, in studies where thinking constitutes the bulk of the work, *i. e.*, in studies where the results are not largely dependent upon repetition or drill, these standards may prove admirable tests of thoroughness of understanding. But what about their value as tests of this other class of subjects?

In finding an answer it is necessary to recall the fact that these are often called the *formal* subjects, because they deal so extensively with forms or symbols. The great danger with them is not that they will fail to receive a fair amount of attention, but rather that they will be taught *formally*, or too mechanically. That is, the children are in danger of

learning to read without expression; to spell words wrongly in writing letters to friends which they spelled correctly in lists; to adopt a stilted style in composition because, having really nothing that they want to say, they are thinking mainly about words; to solve book problems successfully in arithmetic when much simpler actual problems prove too difficult. In other words, there is even more danger here than in other subjects that the work will be superficial, taxing mainly the memory. In that case, interest is wanting, attention is divided, and little is finally learned.

The crucial question, then, in these subjects is: Do the words stand for real thoughts? or, How live-minded are the pupils? That is just the question that the proposed standards help to answer. Inasmuch as they direct attention to provision for motive, for exercise of initiative, for selection according to values, and for grouping according to relationship, they gage the thoughtfulness of both teachers and pupils in these branches. For example, they note whether or not a teacher is making selections in beginning reading that are interesting; whether she is directing the pupils at every step, or is leading them to direct themselves largely; whether she is causing special emphasis to be placed upon a word or a sentence or a paragraph that is especially important, or is treating all such things as of equal value; and whether she is having a story read by its natural parts, or is making the individual word or some other small part the conspicuous unit of advance. Thus the life-giving qualities in these formal subjects are tested by these standards.

But, granting so much, the question may still be asked, "Do these standards test the knowledge of words as required in reading and spelling, and of the fundamental operations in arithmetic?"

We admit that there is more doubt here. Some teachers assert that live thinking in these subjects is the best possible guarantee of mastery of the mechanical facts in them, far better than frequent drills. Others assert that frequent drills are the only guarantee.

On account of this doubt we have deemed it wise to fortify our investigation at this important point by supplementing the proposed standards with some actual examinations in formal facts. The Courtis tests have been used for this purpose, which are discussed, along with the conclusions reached, in Mr. Courtis's report.

### **Their Value as Sources of Suggestion for Improvement**

It was deemed important that standards be chosen for judging the quality of instruction which would do more than show merely whether it was good or bad. Very often after an examination has proved that teaching in the three R's has been poor, a cry is raised for more drill as the remedy. But that suggestion is a mere guess. In fact, "being poor" in reading has usually been found to mean that it was too mechanical; and more drill would only make it still more mechanical, and

thus worse. Whatever be the quality of instruction, therefore, standards for judging it should be chosen that suggest desirable ways of making it better.

Here, we think, is revealed one of the merits of the standards proposed. While not testing primarily what children know—although, as explained, they include that—they do two things: they fix attention (a) on what the *children are doing*; and (b) on the value of it as judged by *its relation to the purposes of instruction*.

Suppose, now, that a teacher is found who is asking a great number of questions in geography, which the pupils are answering as best they can. They may or may not show much knowledge. But since self-leadership is one of the purposes of instruction, the pupils should at least participate in proposing the questions. And since organization of ideas is another prominent object, the many detailed questions should be reduced to a smaller number by a more careful grouping of details. Thus such instruction would be shown to be weak (probably) in two respects; and improvement would consist both in throwing more responsibility upon the pupils, and in studying the organization of the facts presented.

These standards, therefore, by fixing attention on the chief things to be accomplished in teaching, directly suggest ways in which improvement might be effected when that teaching is poor.

### Their Relation to the Curriculum

Not seldom is the teacher's method of presenting subject matter the sole question considered when the quality of classroom instruction is under investigation. But the subject matter itself may have been selected without reference to the aims of the school. That is far from uncommon. Then, no matter how skillful the method of presentation, facts are acquired that have no purpose. That means waste. Or, while the facts are of general value, they may lack adaptation to the age or particular experiences of particular children. Then again even a skillful teacher must fail to secure assimilation of the facts. There is waste again. The curriculum, therefore, as well as the method of its presentation, is necessarily a very prominent subject of investigation when the quality of instruction is being considered. Both of these are continually in evidence in any recitation, and they together determine its quality. Any standards adopted must then be clearly applicable to each. In this way the work of the higher officials—the principals and superintendents—who make the curriculum, as well as that of the classroom teacher, receives a direct evaluation. It is partly because the standards above presented are so clearly related to the curriculum that we are convinced of their merit as a basis for testing the quality of teaching. (Their relation to the curriculum is more fully discussed on page 265f.)

## B. Method of Applying These Standards

### 1. Two Planes of Instruction

#### a. Instruction on the Higher Plane

In instruction on the higher plane facts are comprehended and remembered; they cannot be neglected because they are the raw material with which instruction deals. But they are mainly the means, not the end in themselves. Efficiency on the part of the pupils is the goal; and facts are selected and presented with the object of making the pupils energetic and high-minded; judicious; forceful; and self-reliant. Review must always play a prominent part in good instruction; but review by thoughtless repetition, or *drill*, is not prominent here because it is not necessary. Most of the facts are overhauled and associated in so many thoughtful ways that they are understood and remembered without the help of mechanical repetition. But the striking fact here is the evident relation between the instruction and the principal aims of the school. No doubt some recitations do not hint at this connection; but a majority of them are so conducted that a striving for the higher objects, and a partial attainment of them, are plainly observable.

#### b. Instruction on the Lower Plane

In instruction on the lower plane the comprehension and retention of facts and mechanical skill, rather than certain effects upon the more important habits of pupils, are the acknowledged goal. The subject matter of the curriculum is here more carelessly selected because the need of very careful selection is not felt. Also mechanical repetition is far more frequent because lack of motive, of abundant association, etc., makes it compulsory. Some of the recitations give glimpses of a relation of the facts studied to the higher aims; but the great majority show that neither teachers nor supervisors are looking beyond the storage of knowledge and acquisition of mechanical skill.

### 2. Use of These Planes in Judging Instruction

The general healthfulness and efficiency of the instruction depend upon which of these two planes it is carried on. Not all of it can be on the higher plane; nor should most of it be on the lower. That instruction is good in which occasional recitations are clearly on the higher plane, and in which most of them show intelligent attempts to place it there. That instruction is poor in which the great majority of recitations reveal not even a striving toward the higher plane.

Here, then, is the dividing line between good and poor teaching; and

in this part of our report we have endeavored to find out to which of these two types the teaching in the New York City kindergartens and elementary schools belongs.

In following this plan many details have been neglected. But it is partly because they are not of primary interest at this point. The general efficiency of the schools—the quality of the results that they are attaining—has been the question under investigation; and an answer to that question required that they be judged in the light of the objects that they were expected to accomplish.

It was obviously impossible to enumerate all of these objects, nor was it necessary. Only a few were selected, but those searching enough in character to prove the prevailing tendencies. Many of the details that influence the quality of teaching are considered at length in later chapters. But here our purpose has been to determine, in a broad way, whether the instruction is clearly related to leading phases of active life, so as to be wholesome, reasonably effective, and promising for the future; or whether it lacks this relation, so as to be radically in need of improvement.

### 3. Judging Instruction in Terms of Activity Shown by the Pupils

In applying these standards it is necessary to emphasize a distinction to which reference has already been made. One may observe the teacher, primarily, and judge the quality of her instruction mainly in terms of her own activity. In that case we consider her provision for motive, her pointedness and force of presentation, her attention to relative values, and her exercise of independence. Standards that have been proposed for judging the work of teachers, as a rule, presuppose this point of view.

But one may also judge the quality of instruction chiefly in terms of the pupils' activities. In that case we ask: What are the children doing? Are they setting up objects of their own? Are they pointed and forceful in their responses? Are they selective in regard to the facts according to values? Are they exercising initiative in their study?

While these two points of view are intimately related, since the teacher's activity must greatly influence that of the pupil, they are far from identical. Proof of this statement is found in the fact that experienced teachers will *readily* describe their own procedure in presenting a given topic to pupils, while they will usually hesitate and show embarrassment when asked to describe the procedure to be expected from pupils in studying the same topic. That signifies a consciousness on their part that pupils should do something quite different from what they themselves do, as well as an ignorance of what it should be. The explanation is that teachers, supervisors of teachers, and authors of books on teaching have been so intently observant of the teacher's procedure that they have overlooked that of the pupils. Yet the center of gravity of the school

lies in the pupil; and what he himself finally does determines the value of all the teacher's efforts. He therefore, should be the primary object of consideration, rather than the teacher, and the quality of the instruction should be judged mainly in terms of his activity.

### C. Application of These Standards

#### 1. To Particular Recitations Observed

These standards have been used, first, as tests of particular recitations, with the object, chiefly, of showing how applicable they are to the details of instruction. Then they have been applied to the mass of recitations observed by the various members of the staff of specialists in all the five boroughs of Greater New York. The following are examples of teaching judged in accordance with the standards described:

##### a. Newspaper Recitation in Grade 6

In a certain sixth grade reading class, copies of a four-page school newspaper called *Current Topics*, and dated September 15, 1911, were distributed; then the period was devoted to the reading and discussion of its articles.

Probably one-third of the children present were reading newspapers occasionally. Also most of them would soon be reading them regularly. It would have been fitting, therefore, for the teacher to have reminded them that newspaper reading was a task awaiting them all; and that many persons did it in a very poor way. Thus the reading of papers, and particularly reading them in the right way, might have become somewhat firmly fixed among their purposes.

Following this they might have considered what parts were most worthy of attention. On the four pages were fifty-three separate articles, aside from a few advertisements; and of course all were not equally valuable. Among the most important was one occupying the entire third column of the first page, telling about President Taft's prospective trip that was to consume forty-six days and cover 13,000 miles. A second one of special interest on the front page was a short paragraph on the "Danger in Ice Cream." On the third page was a valuable column about the new "Canadian Railway from Hudson Bay to the West," and on the fourth one about "Maine and Prohibition." Only three or four others ranked with these few in worth, and one of the most important factors in the proper reading consisted in the selection of these portions.

No doubt most of the children were inclined to read the whole of an article in order to determine its value; and that fact would have necessitated a consideration of the relation of the headings to what followed under them. This would have introduced the question of organization. If the substance of an article was correctly suggested in its title it would

often have been unnecessary to read further. But the children would have had to judge whether or not the titles could be relied upon in this way. In thus considering the central thought their attention would have been directed to the very essence of organization. Organization would have had to receive further attention, too, owing to the fact that there were a full dozen of the fifty-three articles that contained only five lines or less. Not enough details can usually be brought together within five lines to secure force, which is one of the principal elements in good organization. For instance, under the caption, "The Turbulent Lake," was the sole statement, "Lake Michigan has just had its greatest storm in many years." Such isolated fragments are unworthy of time. The paragraph on "Danger in Ice Cream" contained only eight lines; and while it stated that much of the ice cream sold is made of impure materials, containing filth and disease germs, there was such striking lack of detail in the way of proof that the desirable force was plainly wanting.

Finally, the teacher might have influenced the pupils themselves to take much of the initiative. For example, immediately after the determination of the task before them she might have said: "You may begin the reading at any point that you think is the best. If the others, or if I, disagree with you, we shall interrupt." Then, if any one had shown a tendency to be nonselective, or inattentive to organization, both questions and answers might have followed from pupils, the same directed to one another; and the instructor would have needed only to supplement their efforts when their own power was insufficient.

The plan, however, actually followed was very different from all this. After the papers had been distributed the teacher said, "John, begin with the left-hand column on the front page," and the first seven articles, occupying two columns, were read in order, with occasional comments and questions on the facts by the teacher. Then, seeing by the clock that a considerable part of the hour was past, and apparently observing that the article on President Taft was long, occupying a whole column, she directed the class to omit that and proceed with the next section on "The Swimming of the English Channel."

Thus this teacher was the leader throughout the period, determining the order of procedure from the start, putting practically all of the questions, and determining the correctness of all the answers. There was not only no exercise of initiative on the part of the class, but there was no selecting according to value by any one; no attention to organization by any one; and no apparent consciousness on the part of any one of any purpose beyond learning the news of the day. In brief, the recitation showed not even a striving toward the higher plane of instruction, and resulted in scrappy information.

### b. Literature Recitation in Grade 5

In a certain fifth grade in literature the class were directed to turn to the five-page fairy tale, "The Blue Light," and to begin on the third page, since the previous pages had already been read. The boy called upon to begin arose and said: "There are three words in the first sentence (of two lines) that might cause me trouble, *i. e.*, *sudden*, *dwarf*, and *midst*." Then he read the two lines aloud and sat down. The next pupil called attention to the word *soldier* in the next sentence, of less than one line, and read that amount. After him each child called upon pronounced the difficult words in his sentence and then read the same. In all, perhaps twenty words were thus named in advance, and the entire paragraph of eighteen lines was read, and then read a second time, in a period lasting from fifteen to twenty minutes. This method of reading is not uncommon in certain parts of the city.

Throughout the period the attention of all concerned seemed to be mainly directed to the proper pronunciation and enunciation of individual words. To this end the smallest possible unit of advance was adopted, *i. e.*, the single sentence, and discussion was confined to remarks about single words and phrases. Organization could scarcely have been more neglected.

If the children had been expected to read this story in school approximately as they ought to read such stories outside, which is practically the standard that we have urged, they would, first of all, have adopted a much larger unit of progress for each person—a whole paragraph, for instance, or a good part of one, if these were long. Then each pupil would have had a much better opportunity to enter into the spirit of what he read, and far more ground would have been covered.

The only suggestion of any attention to organization came in one request of the teacher, at the close of the period, for a boy to give "the idea of the paragraph." But her wording was accidental, for she accepted a detailed reproduction of the entire section without comment.

Need was not lacking, even in this small portion, of dwelling on the more important facts. For in dialogue form it showed how the manner of the soldier changed from utter discouragement and incredulity to surprise, hope, and joy. Attempts to express these different feelings were necessary both to appreciation of the story and to its proper oral rendering. But no such tendency toward selection was shown.

Finally, conversation about the leading features of so interesting a story might have been introduced, the class thereby learning to fill in between the lines by use of their imaginations, and to express judgments at their own initiative. In this way there might have been developed not only a good degree of independence in connection with their study of literature, but also a stronger desire for more reading. But there was no suggestion of any such work. Knowledge alone, and knowledge only



of minute detail, seemed to be the purpose; and the recitation was on the same plane as that on the newspaper held in a different school.

### c. A First Grade Recitation in Reading

A first grade recitation in reading was of a very different kind. The teacher had several times sung before her class the Mother Goose Rhyme,

Diddle, diddle, dumpling, my son John  
Went to bed with his stockings on;  
One shoe off, the other shoe on,  
Diddle, diddle, dumpling, my son John.

Some of the children sang this with the teacher; then, having memorized the tune and the words, they sang it without her help.

At this point she hung a large card before them with the rhyme printed upon it. Remarking that here were the words of the song, she asked for a volunteer to point out the first words, "Diddle, diddle, dumpling, my son John." Some one else volunteered to read the second line; another the third line; and another still the fourth. After whole lines were thus read several times by the children, or were pointed to by them while some one else read them, attention was called, in a similar way, to certain phrases, such as, "my son John"; "one shoe off"; "went to bed"; etc. Finally, single words were located as they were called, or were recognized as they were located.

At the end of twenty-five or thirty minutes a large majority of the class seemed to know most of the words—a remarkable fact, since there were more than fifty children present, and this was only the second week of school.

One striking feature of the lesson was the fact that the children were learning to read something that was of interest to them, so that the words were more than mere empty forms. This plan tended plainly to establish a liking for reading, and, therefore, for the school. Thus motive was skillfully provided for.

The selection required no consideration of relative values, and the teacher made no reference to that point. But attention was plainly directed to organization. The class read the whole piece; then whole lines; then groups of words, or phrases; and only toward the end were the words dealt with individually. The method, up to this last step, was influencing the children to group words according to their relations to one another, so as to read with expression, rather than to pronounce words singly. But in this last part one line after another was read somewhat slowly, with the pointer resting upon each word, so that there was a tendency only to pronounce the words. This procedure seemed so dangerous to proper grouping of words in phrases that the teacher was later asked by the visitor how she made sure of good expression. She replied that she had been securing it partly by having the children *chant*

these rhymes in their music period. Evidently she recognized the full bearing of organization upon Beginning Reading.

Nor was provision for self-help lacking. Having memorized the rhyme the class were in position to read without help each line in order, then to recognize the main parts of which it was composed, and finally the single words. And, if they failed to call a certain phrase or word, they could recall the whole line; or, if necessary, go back to the beginning and trace down the part. In this way they were learning to recognize a form by the aid of the context, which is the least mechanical and most independent approach to new words—either form or meaning—that there is. This plan, together with the fact that the children were already sharing with the teacher the responsibility of deciding the correctness of answers, gave promise of rapid development of self-reliance in the class.

There was no question but that this recitation belonged to the higher type of instruction.

#### **d. Construction of a Chair with Blocks in Kindergarten**

Age of children, 5-6 years.

Materials used, a 3-inch cube, composed of cubes partly subdivided into halves and quarters, etc. (Fifth gift.)

Two children distributed the boxes very deftly, and when all were ready the teacher remarked that, as they had not quite finished the large chair they were making last time, they would make it again.

Boxes were opened and directions were given for lifting the top layer of blocks, so that eighteen whole cubes were left in a solid form measuring  $3 \times 3 \times 2$  inches. The teacher then asked if any one knew how to begin, and several children recalled that three cubes lying at the front should be placed in such a way as to form the back of the chair. From this point each worked independently; that is, they did not wait for each other or for directions, and it was quite evident that most of them held some former construction more or less clearly in mind.

Any deviation from the original form was checked by the teacher saying, "That is not right." "Don't you remember where we placed that block?" "The chair back was not so high," etc. There was no point at which it was apparent that new or uncompleted parts were being thought out. It was a type of lesson which, in the elementary school, would be called a review or a test lesson. Its purpose seemed to be to test ability to recall and reconstruct. Accuracy and conformity seemed the chief considerations.

After all had completed the large chair according to pattern, the teacher said: "Now, you may make some small chairs. Try to make three out of the large one without tearing it down—good workmen always do that way." This part of the lesson was somewhat freer than the first part, and some variations in form resulted. However, since

more stress was laid on the particular mode of securing these small chairs from the large one than upon getting well-proportioned, pleasing chairs, the forms on the whole were not good, and the children displayed little satisfaction in them.

As a judgment of the lesson the following facts seem true:

The children were not discovering a way of making chairs that might prove valuable to them later in their play. Nor were they making these chairs in order to put them into their doll houses, or to play with them otherwise. At least during the period there was no reference to one of these purposes, or to any other. The conclusion is drawn, therefore, that the subject matter of the recitation bore no relation to their own particular desires and plans. In doing as they did they were simply trying to satisfy the teacher.

Organization of subject matter was emphasized. But it was an organization concerned with sequence alone, the particular order of moves agreed upon by adults in securing all possible manipulation of such blocks. Indeed, it was this particular sequence of moves that made up the subject matter of the recitation. That is clearly seen when one recalls that the product wanted, *i. e.*, the chair, might have been arrived at just as truly in much briefer time had the children been allowed to take the blocks out of the box in any orderly manner and set them up in their own way.

Now, while care as to sequence may be a good thing, it was in this case the teacher, rather than the situation itself, that made it necessary, *i. e.*, it was an artificial sequence. And it was so excessively refined that if a child were to follow it closely at home in playing with his blocks, he would be giving signs that he was not well. In general, the standard for values in school is found in their values outside.

The absence of any substantial purpose of the recitation, from the children's point of view, allowed them no basis for their judging of relative values. And the teacher, in her devotion to artificial technic, had entirely lost her bearings in regard to them, too. That accounts for all neglect of proportion of parts in the chairs that were made.

Finally, the suggestion as to what should be done came from the teacher, and the sequence of steps or moves came from her. Even in the second and freer part the pupils were directed to "make *three chairs* out of the larger one," and do this "without tearing it down." While there was some freedom as to rate of speed, the recitation may be described as a dictation exercise, or a review of one, with freedom allowed in a few minor respects.

On the whole, the recitation, lacking purpose and content, was a good illustration of the extremely formal work often seen in kindergarten and primary schools.

Its sole excuse is a profound belief in its disciplinary effects; but the doctrine of formal mental discipline has been so nearly disproved by modern psychology that little worth is left to such instruction beyond

its keeping children out of mischief. That, as a principal claim, however, converts the teacher into a mere caretaker.

#### e. Construction in Kindergarten

Children 5 years of age. Arranging and pasting of pictures of a blacksmith at work.

The teacher recalled a visit made by the class to a blacksmith shop, and asked them if they would not like to make a picture of the blacksmith.

"What ought the picture to show?" she said. Different things were mentioned and some of the movements of the smith at work were illustrated by the children. Then the teacher told them they could plan a picture showing him bending over or upright, with hammer in hand at the anvil, or in front of the forge. Parts previously cut out by the teacher were adapted to different poses, and the children chose what they would represent. Then they arranged the parts according to their own ideas, teacher and children occasionally commenting. Children asked questions and asked advice as to placing, and the replies sometimes came from the teacher and sometimes from other children. A good deal of recalling and of mental picturing was necessary.

The task of producing a picture of a smith at work that expresses an idea that is accurate and pleasing in both selection and arrangement is one that is worth while. Its accomplishment requires observation, thinking, and taste of a sort often called for throughout life, and intimately related to children's needs and desires. Motivation is, therefore, admirably provided for here. In the parts of both teacher and children there had to be weighing of values, with reference to the idea to be expressed and also to its method of representation.

The former must select the most prominent and characteristic things connected with the blacksmith in order to cut out the parts for the picture. Then the children, under her leadership, had to distinguish between essentials and nonessentials, so as finally to center upon some of the same things. Likewise, in deciding upon desirable arrangement, distinction and selection were again necessary.

Further, the "composition" called for the putting of things together in right relation. The picture was not to show merely a list of objects that the blacksmith used, nor any other mere list. It had to have a central idea, if possible, with details grouped about it, so as to form a unit. Attention to organization was, therefore, necessary throughout the period.

Finally, although the teacher assumed much initiative in originally selecting and cutting out the parts, its exercise only allowed her to be the better prepared to lead the pupils to exercise their own power in that direction. And not only did they select and arrange, but in her presence they corrected, and made suggestions to, their mates. Usually, too, when

she corrected she did not have to exercise authority by declaring, "That is not right," or "That piece does not belong there"; but she could ask, "Was it so in the shop?" or "Could the smith work in that way?" Thus while limited by the facts they were free to express their own individuality, a fact that the great variety of pictures produced quite conclusively proved.

This recitation was almost ideal, forming a striking contrast to the one preceding in every respect.

#### f. A Lesson in Shop Work

Grade, 7B; 28 boys. Project, a book rack with a hidden mortise joint.

The boys at the benches stood at attention. Monitors distributed materials. They were vigorous and exact in their work.

Teacher: "What is the next thing to do on our book racks? Hands up."

John: "Cut down the end parts to put into the mortises we made last time."

Teacher: "What do we call these end parts?" A few hands.

Isaac: "Tenons."

Teacher: "A tenon. Now this is the way to begin." The teacher makes a quick sketch of the board used as the bottom of the rack. He talks as he sketches, asking the boys to name the various parts as he sketches—working edge, dimensions, etc. He tells about taking the try-square and pencil, squaring the ends, taking the ruler and measuring one-half inch in from the end on the working edge, then down one inch from the working edge on the surfaced side of the board; then about applying the try-square, starting from the working edge and making the line that marks the inner edge of the tenon; then about setting the thumb gage at half inch, and marking the upper and lower edges of the tenon. As the teacher talks and refers to his sketch, the boys take the sheet of drawing paper already containing the previous portions of the instruction given and make a similar sketch and take down the chief items of the dictation.

When the problem is thus set forth through the sketch, the teacher takes his own book-rack materials (he makes a project, as a demonstration, step by step, before the class in each case) and, placing the board for the bottom on the bench, squares up the ends as he has instructed. Before taking each step he asks the boys to tell him what to do, requiring that they name each part technically in speaking of it, and each tool as it is taken up. If there is doubt or ambiguity in their statements, he asks them to come up to show him what they mean. Thus, talking and working, he does just what he expects them to do. On finishing this, which took 12 minutes, he directs them to go to work. He now moves about among them, calling especial attention, where needed, to little

points in handling tools or materials. One rather common defect was the failure to place boards properly in the vise. Another, common to most of the pupils, was the squaring. So he interrupted thus:

Teacher: "Everybody stop work. Where do we always begin in squaring?"

Boy: "On the working edge."

Teacher: "Of course. Now most of you are forgetting about that." He then takes the board of one boy and, applying the try-square, starts on the working edge, goes around the board, coming back to the working edge, telling of the order of steps as he goes, insisting that when he gets around the board the lines must meet. The boys watch attentively. "Now does everybody understand? Then go to work." He continues among them, often telling what to do, frequently asking, "What did we say about that?" or, "What do your notes say about that?" and often taking the materials and tools and showing what to do. Reasons for doing things are scarcely at all considered.

A stop is called to show once more just how the gage is used in marking out the tenon. Work is resumed after two minutes of talk and demonstration.

A stop is also made when the parts removed to make the tenon are sawed out; and a demonstration is given, showing how to saw squarely across the board to make the edges of the tenon square when the chisel is applied to remove the part. Some boys are careless, sawing too fast. Teacher: "It never pays to be in too much of a hurry in sawing or doing anything else in wood work. Here is a boy who has been in so much of a hurry that he has sawed too far (showing board). He will have to square up his piece, cut it off, and begin all over again. Don't forget, in sawing a board in two, to use the bench hook; in cutting out the tenon parts use the vise. Now go to work."

Boys frequently go to the teacher to ask a question. The question is usually *what* to do, or *how* to do some definite thing. The teacher often refers back to the demonstration, asking, "What did we say to do?" or, "How did we do it?" or, "Didn't you get that in your notes?" But he always tells or shows the boy if he can't recall.

At the sound of the bell work stops where it is, to be resumed next time. Most boys have about finished the step assigned. Two did finish before the end of the period. These were put to work as helpers for the slower ones, telling them what to do, but not doing it for them.

The lesson can be considered as to motivation and initiative only in relationship to the making of the project as a whole, which probably occupied six or seven lessons. Except as the activity involved is in itself pleasurable to most boys, and that the project *might* be used, there is no evidence whatever of motivation for the project. The following facts show how very little opportunity there is for either motivation or initiative:

- a. The book racks are *prescribed* for all by the teacher.

- b. They are all uniform in materials, design, and finish.
- c. There is no adaptation of the project in any particular to any *specific* place or purpose.
- d. The method of instruction is *dictation*. Questions of what to do, or how to do it, do not have to be thought of or asked. If the boys wait until the appropriate time, they are both *told* and *shown* every step.

The organization of the material in the lessons on the project is based purely upon the technical sequence of processes involved in construction. So far as observed, the pupil is not made conscious of this organization at all. Apparently the organization to the boy is simply this: "What do we do first in making this book rack?" This done, it is, "What do we do next?" repeated step by step, until the project is finished. The boys' notes were evidence of this. They added the new steps, as they were given from day to day. They had not organized the problem as a whole and seen its main parts in their relationships. There were no summaries; and there was no grouping of facts into "points" in the lesson.

The values stressed in the class were:

- a. Accuracy in technical processes.
- b. Correctness in the use of tools.
- c. Excellence of finished products.
- d. Speed in securing results.

Attention to detail is the necessary factor in gaining these ends. These details all stand on about the same level. No broad principles are offered and no attention is called to certain most crucial parts of the undertakings; but there is simply a direct application of detailed instructions, making for immediate technical excellence. There is no attention whatever given to the body of thought included in the related fields of industry, geography, or civic and social life, which should give these projects their appropriate evaluation in the elementary school.

The recitation was distinctly on a low plane, inasmuch as it provided for motive in only the most general way; paid almost no attention to individuality and initiative; showed no tendency to bring the multitude of ideas into a few large groups, and ignored relative values, or values in general, entirely. Possibly it may seem good to some persons; but it was good only in the sense that it accomplished several of the minor purposes of instruction—while endangering those of higher value.

#### g. A Lesson in Drawing

Grade, 8A; 37 boys. Problem, working drawing for a piece of bent gas pipe.

Teacher: "Get out your drawing materials and mount a piece of drawing paper with thumb tacks. To-day we shall make a working drawing for a piece of gas pipe bent like this:" (draws the form on the

blackboard). "Its total length is to be 8 inches and the two parts connected at the turn 2 inches apart. It is one-inch pipe. What will be the total width of the piece?" A boy answers, "Four inches."

Teacher: "Our scale is to be  $\frac{1}{2}$ . How long will the drawing be?" "Four inches." "How wide?" "Two inches."

Teacher: "Now, first, rule your margin lines. How far from the edge of your paper will these be?" "One-half inch." "Yes. Mark off the distance with your rulers; then be sure to use your T square and triangle to make the lines. Then make your 'thumb nail' sketch in the upper left hand corner."

The boys proceed as directed, knowing what to do from previous experience. Meantime, the teacher makes a diagram on the blackboard representing a sheet of paper with margin lines. She then goes about among the boys, insisting on the correct use of the T square and triangle. Her method is simply telling them what to do. The boys find the use of the triangle, for making vertical lines, rather difficult. When the margin lines are all made, and the thumb nail sketch is finished, the teacher then asks them what to do first.

Boy: "Make the construction lines." "Yes. How shall we make them?" "Very light." "Yes. Place the first horizontal line two inches from the top; where will the bottom line be?" Boy: "Four inches." "Is that right?" Another boy: "No. Two inches." "Why?" "The pipe is four inches and the scale  $\frac{1}{2}$ . That makes the drawing only 2 inches." Teacher: "Right. Now put in the bottom line." The teacher makes her own drawing on the blackboard as the instructions are agreed upon. She talks to the boys about the dimensions and the lines to be used, developing her sketch as she proceeds. Questions of *why* are given some consideration. Boys are asked to come to the board, at times, to show what they mean by the use of her drawing. When her own drawing is finished, she tells them to begin work on their own. She moves about among them, helping them to get dimensions right and to use properly the T square and triangle. In getting dimensions, she asks questions leading them to see answers themselves.

When the construction lines are all in, the teacher stops them all and has a boy come to the blackboard to put the sketch of the pipe within the lines. This is all quite simple and is easily finished. She stops him, when his first line is made no heavier than the construction line, to ask him, "What kind of a line should you use?" He replies at once, "A heavy line," and makes heavy lines. The boys are then told to put in their own sketches.

Another view of the pipe is then taken up. The teacher bends a piece of wire, which happens to be on the desk, into the desired shape and holds it up with one end toward the boys. They are asked what they see with the pipe held so, and then how to represent it. Construction lines are made, using the original horizontal lines projected. The



teacher makes the whole sketch on the board, and the boys then follow with theirs. Before all have quite finished the bell rings.

With this development of what to do, and how to do it, and with the copy on the board before them, it is almost impossible for the boys to make a mistake. The papers show good results.

The project is purely formal. There is no connection whatever made between the drawing and the execution of the problem in the shop.

Not a single healthy provision for motive can be found in this lesson. This is shown by the following facts:

- a. The teacher *announced* the subject of the drawing.
- b. The drawing was not to be used as a basis for construction.
- c. The particular subject had no direct relationship to anything that had gone before in the drawing, or construction work.
- d. There was no connection pointed out between this problem and the industrial activities which it illustrates. It was an isolated unit of drawing without purpose to these boys.

Likewise, there was no provision for the exercise of initiative:

- a. The problem as a whole was *prescribed*.
- b. The positions and dimensions were *prescribed*.
- c. The procedure was definitely *uniform*.
- d. The method was *dictation*.

In organization, the lesson represented a mere sequence of steps in the process of constructing the drawing. These included, roughly:

- a. Stating the aim or problem by the teacher.
- b. Ruling the drawing paper for the margin lines.
- c. Making the "thumb nail" sketch.
- d. Drawing construction lines.
- e. Drawing in the object in heavy lines.
- f. Indicating dimensions on the finished drawing.

This is typical of a plan which might apply as a sequence in procedure for any simple working drawing. As a means of getting an immediate drawing, well done technically by dictation, the results were excellent.

As to relative values, the features emphasized were:

- a. Accuracy in form and dimensions.
- b. Correctness in the use of drawing instruments.
- c. A knowledge of the meaning of the forms and dimensions used in the drawing.

Questions other than these did not arise. The relation of this problem to the industrial world, the values within the field of draftsmanship of the ends stressed, the making of blue prints as used by the industries,

and all other questions not included in getting as much finished work as possible on the paper within the period were omitted entirely.

Again, so far as the lesson itself gives any evidence, it lacks the elements that place instruction on the higher plane.

If the teacher had aimed to introduce the pupils into the field of mechanical drawing in a way that would make them interested in it, and, perhaps, inclined both to study the excellence of such drawings, as seen in advertisements, and to produce others themselves in connection with their own needs, she would have selected some task that promised to appeal to them. And she would have tried to find some plan that could be used as a basis for actual construction later.

If she had appreciated the worth of individuality and initiative, she might have allowed several different objects to be drawn; or, if the class were not ready for that, she might have allowed one object to vary in minor details, according to the abilities and inclinations of different pupils. Also, she would have avoided dictation and uniformity of procedure, so that the pupils might feel and exercise their self-reliance.

If she had understood the value of organization the task would have been plainly one of a group having a common purpose; and related knowledge acquired in previous periods, that would have proved helpful here, might have been recalled by the pupils, with their attention especially directed to its ordering and perspective. Also, the steps in the performance of the new task might have been separately named and described.

Finally, if the weighing of values had held high rank in her mind, she might not have neglected accuracy and correctness, *i. e.*, technique; but she would frequently have directed their attention beyond such details, to the blue prints and later construction, in a way that would have kept the *need* of accuracy and correctness before them, while giving them also some standards for judging the relative values of all these items.

It is the entire absence of these broader ideas, and of the spirit that goes with them; the absence of all tendency to connect up knowledge and ability with the life that gives them worth, that places this recitation, like the former one, on a low plane.

A rough parallel to this kind of instruction would be found in literature, if children were brought only to the point of pronouncing and defining each word correctly, without reference to the broader ideas in the selections or to a taste for the field. Again, it would be paralleled in composition, if children learned to write each sentence correctly, without either acquiring a knowledge of the principles of composition, or reaching a point where they have any ideas to express, or feeling any interest in the method of presenting thoughts to other persons.

### **h. Arithmetic Lesson in Grade 1A**

In a certain 1A grade the arithmetic lesson consisted of a drill on the addition table of 1's. The teacher gave the addends of the table in order, beginning with 1 and 1; after each combination she called upon some child to give the sum. She had not gone far before a pupil failed to give the proper answer. The teacher said, "No wonder! You can't think when you are not sitting up straight." The second failure brought forth the remark, "You can't think when you have your hand in your pocket."

There was no problem before the pupils that required solution. Even the motive that would have been present had the work presented any new difficulties was lacking. There was no recognition of values, because the instruction was unrelated to any specific things of value in their lives. There was organization, in the sense that the facts desired were grouped in tables, and the table of 1's was to be entirely or largely mastered before the table of 2's was undertaken. But that is the logical organization of the adult, and just the kind that is repellent to children. No initiative was exercised by the children.

The entire period was characterized by a lack of interest that could have no other effect than to make the children dislike the subject.

In considering how our standards might be met in first grade arithmetic, we see the need of abandoning such systematic instruction, and of approaching number as it is actually used by children; for example, in connection with scoring in games, and with the weighing and measuring of actual objects, confining the combinations to small numbers. In that case, the table of 1's and 2's would be combined with some of the others, thereby securing some variety in the study, and showing its naturalness. Motive would thus be provided for, and with it would come some attention to relative values and some possibility of initiative. Organization of these facts is least needed. Since they are finally to be used entirely independently of one another anyway, there is no need whatever of grouping them into a table, except as that grouping may be a minor means of introducing variety. But drill upon such a table, over and over, is the extreme of abstractness. The recitation, as held, is a good illustration of the kind of instruction that stultifies children while giving them knowledge.

### **i. Arithmetic Lesson in the Grade 8B**

Forty girls.

The subject for this lesson was a review of bank discount. The class had studied bank discount in the 7A grade, and in the 8A grade they had had business forms, including promissory notes, payable at banks, written and discounted.

The lesson began with the assignment of circles as the topic for the

next day. It was required to find the diameter when the circumference was given; also, the circumference when the diameter was given, and the area. Then the class was asked, "What is a promissory note?" Several pupils replied by repeating a more or less formal definition of a note. Others were asked to repeat the form of interest-bearing and non-interest-bearing notes. Following this, there were brief references to certain terms employed. After that, they were supplied with books and told to work problems 9, 10, 11, and 12 on a given page. The problems were statements of dates and amounts, all involving the same principles.

The girls worked with earnestness, and throughout the lesson there was a healthy spirit of sympathy between teacher and class. They had been told to check up their results by the answers given in the back part of the book. Very soon there was a group of them, waiting their turn to receive assistance from the teacher. Some of those who had a problem correct were asked to help others, and the period closed while this work was in progress.

What were the educational values of the recitation? As it was conducted, certain isolated facts that might serve for examination at the end of the term, and that might, possibly, some time prove useful, were presented. In reviewing them the motive of the pupils was ignored, memory being mainly appealed to; and, during the forty minutes, no pupil expressed any opinion or took any initiative in a way worth mentioning. The value was slight, to say the least.

What might have been accomplished? The pupils being girls, they would probably forget how to solve problems in bank discount long before wanting to make any practical use of it. There could hardly be much purpose, for them, in the review of the arithmetical processes alone.

But the function of a bank as a public institution, particularly some of the advantages in which the public are directly concerned, and which can be easily comprehended, might make this a topic of much general worth, and hence of interest to these girls. That might involve the conditions under which a bank loans money, the security necessary, the rules for interest, and the need of promptness in payments. It might, also, involve comparison of the advantages of borrowing money at a bank with the advantages of borrowing it elsewhere. In brief, the value of the topic is found in its various relations to ordinary persons. If it has such relations—numerous and close—it will appeal to the motives of young people, will require judgment of values as well as organization of facts, and will allow the exercise of initiative. The central idea would still be quantity; but arithmetical processes themselves would be subordinated to questions more worth study.

There are certainly many other topics in arithmetic far more valuable for children of this age than bank discount; so many that this topic should receive no attention in the elementary school.

### **j. A Series of Lessons in Music**

The following statements are the result of ten lessons, ranging from the first grade through 7B, in the same school, and all given by a supervisor of music. As the same plan underlies all the lessons, we shall describe it, giving illustrations from different grades.

#### **a. First Kind of Exercise**

The first work consisted of exercises in breathing and tone production. The children in the first grade were told to take in a full breath and sing a pleasing tone while letting out the breath, imitating a tone given by the teacher. In the upper grades similar exercises were carried on by simply saying, "Inhale and exhale," the teacher singing the model tone again. The pitch of these tones was high and of good quality, and it produced a pleasing effect. Sometimes the tone was sustained, sometimes a scale was sung down and up. In the upper grades changes as to various vowel tones were included.

#### **b. Second Kind of Exercise**

After the tone exercise the children took their seats, and technical questions with reference to pitch and rhythm were introduced. For questions in 1B children were drilled on the numbers 1, 6, 4 downward from the upper octave. In the second grade the teacher spent the time attempting to have the children appreciate two beats to the half note. In the third grade notes and rests were put on the blackboard. Children also sung the Mother Goose words to various dictations at the board, thus showing some independence of the syllable names. In the fifth grade the nature of the slur and tie was taken up. In other grades sharp four, flat seven, and divided beat were considered. This work was done at the blackboard.

#### **c. Third Kind of Exercise**

This was followed in the grades from the third on by a third type, which consisted in the use of the book, tests being given to show the power of the children to sing by sight.

#### **d. Fourth Kind of Exercise**

A fourth type of work was singing some song that had already been learned. Occasionally this fourth step would follow immediately after the vocal exercise.

The approach of the teacher to her pupils was very friendly and happy. The order and attention were all that could be desired, from a formal point of view. The instruction being given by the supervisor, carefully prepared plans were furnished by her to each teacher, in-

dicating the successive steps, whether in the tone study of the first, the rhythm or pitch work of the second, the sight reading of the third, or the song singing of the fourth.

### **Organization**

While each type of exercise was, no doubt, logically related to the same type held on the preceding day, in a given class, there was little sign of relationship of the four types to one another within any given lesson. For example, the voice exercises were independent of the study of pitch and rhythm; the latter study was unrelated to the sight reading in the book; and all three lacked connection with the song singing. Thus each lesson presented four separate strata, and a lesson of twelve minutes was controlled by four distinct aims rather than by one.

### **Provision for Motive**

Ostensibly, the object of all the exercises was to learn to sing, but, while the relation of each task to this object might have been clear to the teacher of music, it could hardly be appreciated by the pupils.

If the tone and vowel exercises had been followed immediately by the song, so that the children could have realized that the deep breathing and proper pronunciation of the vowel affected the way the tone sounded, the purpose of what was done would have been obvious, and the children could have coöperated toward accomplishing the end. Or if the technical drill on rhythm and pitch had dealt with the specific difficulties of the sight-singing exercise that was to follow it; or if the order of these two had been reversed; or if a song had been sung and its difficult parts had been taken for special practice, in order to get better rendering; then the notation problems and other technical work could have been mastered under the influence of a normal motive.

By failing to relate the various forms of practice to the ends they served in better song singing, the plan that was followed cut out all possibility of having the pupils—except the most musical ones—realize any purpose in what they were doing, except when they were actually singing songs. Here the pleasurable end of the song justified the activity.

### **Consideration of Values**

This omission of purpose for the pupils made it also impossible to exercise their judgment with reference to the success of their efforts. Each exercise was peculiarly arbitrary. For instance, nowhere in the ten lessons was there any intimation that the reason the high tones were sung first was to enable the children to bring the qualities of these pleasant tones into the lower part of the voice; or, that the vocal exercise was a means for them to produce better low tones. The result was that in

the song singing the lower tones had the chest qualities that the vocal exercise was peculiarly adapted to counteract. If the pupils had realized the relation between the vocal exercises and the low tones desired they would not only have had a purpose for their work in these exercises, but there would have been a basis for judgment, on their part, of the kind of tone they were producing in their songs.

The same principle holds in the relation of the technical exercises to the purpose they served in the more adequate reading of the songs, or exercises. For instance, if the necessity for holding a tone two beats grew out of the fact that the song required it, and that it did not sound as well without it, a purpose would have been established for learning to hold a tone two beats long when necessary. But to practice two beats, as an abstract exercise in a series of mathematical tonal relationships—while it might eventually develop a technic that could be applied—almost entirely destroys the advantage that would come from the awakening of the pupil's own thought in relation to what is being done.

### **Provision for Initiative**

On the few occasions that the children were asked to volunteer any preference, especially in reference to songs that they wished to sing, they showed interest; and they would probably have responded freely, if more development instruction had been undertaken. But such spontaneity was prevented by the fact that most of the time was devoted to independent technical exercises that made no appeal to their imagination or preference.

### **Summary**

The group of lessons was admirably conducted, so far as technique alone is concerned. But they were poorly organized, in that they had been planned with reference to the purposes of the adult only, and left the pupil in the dark as to the object of the various activities required of him. This lack of motive made it impossible to appeal to his judgment, for he could have estimated the quality of his own performances only in the light of the objects that they were expected to accomplish. Finally, the pupil, not being an intelligent coöperator in the process, little spontaneity was secured.

### **k. Physical Training—Typical Lessons**

#### **a. Grade II—Boys**

Class stand. Open windows.

Arm stretching—8.

Marching.

Breathing—4.

Knee bending—16.

Head turning—8.

Class sit. Close windows.

The teacher, with syllabus in hand, directed the class in a mechanical, lifeless manner. During the marching she paused between the counts to call out, "Chest high—Keep your shoulders down—Push your hips back." These coördinations being beyond the voluntary control of a small child, the results were exaggerated, faulty, and unnatural positions. As classes were passing through a hall a principal's attention was called to these positions. His reply was, "Thank goodness, the children can't hold them long."

During this period the boys' eyes were fastened upon the teacher. They stood at "attention" for the entire period. Their faces did not radiate a suggestion of interest in the things they were doing. There was a feeling of severe effort in the room. The teacher's manner and voice intensified this. When the children sat there was a sigh of relief from both teacher and pupils. Asked if the children enjoyed the gymnastic work, the teacher said, "Not as much as they do games, but they have to have it."

#### **b. Grade IV—Girls**

Class stand.

Arm stretching sideways—16.

Breathing—4.

Charging forward—8.

Head turning—16.

Trunk bending—16.

During the time this lesson was being given the children were rigid, quiet and unnatural. Not once did a head turn unless at the teacher's command. The hands were held close to their sides, and not an eye was turned away from the teacher. The rhythm was indicated by the snapping of the teacher's fingers, and not once during the period did she vary the rhythm. The commands were given in a cold, harsh voice, and the teacher took no part in the exercises. She stood apart from the class and read the exercises from the syllabus. At the command, "Class—sit," the little girls noiselessly sat, took their books, the windows were closed, and the day's work went on.

When the teacher was questioned regarding the relative amount of time given to games, she explained, with emphasis, that she had given her last game in the classroom. The time was when she attempted this, but experience had convinced her of the folly of such procedure. Her aim is to make the children feel that when they enter the classroom they are there for work. She believes that work and play form a poor com-



bination in the classroom. Now, they have gymnastic work each day in the classroom, and the children are allowed to play in the court a few minutes during the afternoon recess. They are impressed with the fact that this period is in no way related to their classroom work.

### c. Grade VIII—Boys

A relay race had been planned for this class. Hearing the good news the boys commented upon the situation as they entered the room. By way of explaining this disorder the teacher said that he could always tell when the boys were expecting a game. But the enthusiasm waned, somewhat, when they were put through a ten-minute drill with iron dumbbells, preceding the race. The exercises were:

Marching—Facings.  
Charging with trunk twisting.  
Trunk bending.

These exercises are typical of those usually given. The lesson was carried forward with military precision, and with many indications of fatigue. When the command was given to "place bells," little time was lost and the spirits immediately revived.

The relay race followed, and was enjoyed by all. It was characterized by a spirit of good will and wholesome competition.

This instruction—so far as the first two exercises are concerned—not only fails to meet the standards set up, but, in very important respects, it directly opposes them.

There is much possibility in the games; but they are so slighted, in the amount of time devoted to them, as well as in other respects, that they are treated more as a means of recreation than as an instrument of education, capable of accomplishing the highest aims of teaching by the use of maximum skill.

### 1. Hygiene—Typical Lessons

Grade VI, boys; grade VII, boys; other lessons also.

Above the fifth grade, the work in hygiene in this particular school is carried on according to the departmental plan, one twenty-minute period per week being given to this work.

For the lesson observed, the text used was Eadie's "Physiology and Hygiene for Children." Each boy was given a book. As the teacher called the names, the boys stood, and, with much difficulty, read the formal, technical text-book discussion of the following topics:

Drinks which contain alcohol.  
What is alcohol?  
How malt liquors are made.

How distilled liquors are made.  
What alcohol is like.  
Is alcoholic liquor a food?

During the lesson a few questions were asked. Among them, "What is alcohol?" One boy replied, "Alcohol is a poison medicine." After he had read "How malt and distilled liquors are made," he seemed to have gained no clearer views on the subject.

The reading proceeded in a monotonous way for twenty minutes. In that time most of the boys had read at least one paragraph aloud, and had struggled manfully with carbon dioxide, ferment, yeast, vapor distillation, and other words equally suggestive.

Throughout the lesson there was felt the influence of law-required instruction. The subject matter had been chosen, not because it seemed related to the needs and purposes of the children concerned, but because conformity to law had made the use of such material necessary. The teaching was done in obedience to law, in a perfunctory manner, and without interest on the part of either teacher or pupils.

The argument is advanced that such instruction is justified by the fact that it is required by law. The law does require that instruction in the effects of alcoholic drinks and narcotics be given, below the second year of high school and above the third year of the elementary school, "with suitable text-books in the hands of all pupils, for not less than three lessons a week for ten or more weeks, or the equivalent of the same, in each year." The law does not state, however, that the work shall be confined to one text-book; nor that it shall be given in a mechanical way, entirely unrelated to life and to the other subjects in the Course of Study; nor that the thirty lessons shall be given consecutively. We believe that, if these required lessons were planned as they might be, and wisely distributed, the required number could be given, and the required subject matter discussed, without placing undue emphasis on the phases of this subject that are not only uninteresting, but unwholesome.

Discussion of the organization of subject matter would involve only a criticism of the text-book used, for there was not the slightest deviation from the text-book arrangement. No topic was given more emphasis than another. If the teacher felt that the making of malt liquors should be given more stress than the making of distilled liquor, his manner did not indicate it. At the close of the period he was asked his opinion regarding the value of such instruction. He replied, "Worthless."

In five other lessons observed in this building, two 7A grades considered the subject of bones and digestion; two 7B grades, the heart and respiration; and the 8A class, alcoholic drinks and tobacco. All of these recitations were conducted in the same manner. The boys read, and the teacher interrupted with occasional questions bearing directly upon the reading, and involving text-book answers.

During a lesson on the heart and circulation, the boys struggled with the size, position, shape, and structure of the heart, the blood vessels, the composition of the blood, and the process of circulation. After they had read the paragraph describing the red and white corpuscles, the teacher asked, "What are the red corpuscles for?" The answer came promptly, "The red corpuscles are to fight the white ones." Although the boys had their books open before them and had only a moment before read about the work of the red corpuscles, few realized that the answer given did not conform to the teaching of the text.

The lesson with the 7A boys included the following topics:

- Uses of the bones.
- Form of the bones.
- Structure of the bones.
- Materials of which bones are made.
- Growth and repair of bones.
- Bones of the head.

As in the other recitations, the boys read "by turn." Answers to the questions asked indicated that the pupils were giving little thought to the subject matter. They were simply pronouncing the words which they saw on the pages of the text. When the teacher was questioned regarding the value of such material, he stated, without hesitation, that it had little practical worth; but that he was giving it in order to conform to the prescribed Course of Study. The syllabus for the 7A grade, while dealing mainly with the anatomical structure of bones, etc., does, however, suggest some few practical applications of the subject matter studied, namely, round shoulders, spinal curvature, and adjustment of desks. The teacher's criticism may have been just; the material inappropriate; nevertheless, he had failed to make use of the few vital points of contact with the child's life which the syllabus affords.

The criticism passed upon the work in hygiene in this school may seem severe; yet it is typical of the work done in many of the schools. In general, it fails to meet any one of the standards we have been using.

## **2. Application of These Standards to Kindergarten and Elementary Instruction Throughout New York City**

### **Method of Judging Reliability of Conclusions**

The analysis of the recitations presented in the preceding pages illustrates how instruction can be judged by use of the standards proposed. Now we come to the conclusions reached touching the quality of instruction throughout Greater New York, as judged by these standards.

These conclusions are the immediate result of facts gained at first hand. Kindergartens and schools, taken at random, have been extensively visited, and teachers have been personally interviewed, in order

that instruction in the classroom, and the attitude of the teachers themselves, might be directly observed.

But it was realized that the quantity of data secured in this way would necessarily form an insufficient basis for conclusions in regard to the work of 15,000 teachers. It would require a much larger number of expert observers, and a far longer period of time, than the plan of investigation allowed, to collect enough facts, by direct observation, on which to base judgments that could be trusted.

The conclusions thus reached needed, therefore, thorough verification. And it was not difficult to discover valuable means for doing this.

It was recalled that the original ability of the teacher is only one of the things that determine the quality of classroom instruction. The abilities of her superior officers are, likewise, important factors. The curriculum is a great aid or an obstacle to good results, according to the insight shown in selecting its subject matter; the syllabi, which interpret this curriculum and offer suggestions on method, are a guide, and a source of inspiration or depression to teachers, according to the definiteness of statement, and the breadth of view that they evince; and, finally, the supervision by principals and superintendents tends to produce an enthusiasm that will manifest itself outside of school in extra preparation, and in the class by alertness to each pupil's condition; or it tends in the opposite direction. These other influences, taken together, must very greatly affect the atmosphere that surrounds the teacher. Instruction can hardly be good without their positive support; and it is not likely to be poor, if they are doing their work fairly well.

An extensive study of these factors, therefore, has furnished the data necessary for verifying the conclusions reached by direct observation. If these factors are found—owing to the quality and quantity of their influence—to oppose the conclusions previously reached, then those conclusions are rightly subject to serious question. If, on the other hand, they plainly verify those conclusions; if, indeed, their influence is so potent, that it would seem sufficient to produce the very conditions that have led to the conclusions—then the latter may be considered to be reliable.

These other factors, therefore, are related to the statements here made, as proofs; and judgment as to the reliability of these statements must be waived by the reader until these proofs, that follow in later chapters, have been carefully examined.

## **Quality of Instruction in the Kindergarten**

### **a. Inculcation of Purposes in Children**

Specific and childlike aims tending to call out a high degree of effort are very prominent in the kindergartens. A certain form is folded to serve as the mount for mother's valentine, to be presented at the valen-

tine party of the Mothers' Meeting; a bag is folded and sewed, to be used in the postman's game; little houses are carefully cut and pasted for the group work in which a city street is represented; blocks are evenly laid by another group of children to represent the sidewalk of that same street; it is suggested that a certain lullaby would be nice to sing to the baby at home, and the children put new sweetness and interest into the singing.

These detailed purposes play directly into the broader aims that are plainly in evidence in the kindergarten. Those are: a love of stories, of plants and animals, of games, of objects of beauty, and of constructive work—a love that finds expression in little deeds, such as those named, and that leads to more far-reaching hopes and plans.

### **b. Attention to Organization**

Most kindergartners endeavor to organize the more or less random and instinctive activities of even their youngest children. At the kindergarten age the organization of ideas takes place largely through the organization of activity, the ordered act being considered the very best evidence of ordered thought. A representative play is worked out bit by bit, until a reasonably finished whole results; a simple little dance is created out of selected movements; a piece of group building is undertaken wherein each child's work contributes to the whole, but must occupy its own subordinate position; all such efforts call for organization in the same sense as does the high school student's essay. The children are less conscious of the process, but they profit by it just as truly. One seldom visits a kindergarten without observing that the kindergartner herself is carrying the idea of organization constantly in mind; and, without observing, also, that the children are doing the same thing, to some extent, in their attention to sequence, to the inter-relation of facts, and to grouping.

Indeed, one of the most serious faults of the kindergarten is found in its over-devotion to sequence, particularly to the logical sequence of the adult, which is probably even more a source of torment to some children in the kindergarten than to any in the elementary school. The kindergarten lesson, described on page 228, is an illustration.

But, while there are such excesses here and there, we are convinced that on the whole an emphasis is placed upon organization of ideas in the kindergarten that accords roughly with the worth placed upon it in life outside.

### **c. Attention to Relative Values—Imagination and Reasoning**

The kindergartner makes noticeable provision for relative values. Emotional response, appreciation, preservation of an inquiring attitude of mind, socialized behavior, seem to be regarded in the regular instruc-

tion as of, at least, equal importance with knowledge. The general viewpoint of the kindergartner is that whatever is done in the kindergarten is of value to the extent that it counts, or functions, in life. Hence, the tendency to weigh worth is common here, with both teachers and children.

Again, however, a defect is to be noted, namely, that devotion to technique, to precision, and exact imitation is now and then extreme on the teacher's part, tending to influence the children to forget all about the real worth of things. This is true particularly in the use of materials, and is not representative of the work as a whole.

#### **d. Provision for Exercise of Initiative and Independence by Children**

Kindergarten teachers have an enviable opportunity for encouraging the exercise of initiative and individuality of children, because uniformity is not demanded. Without a fixed program and without rigid requirements of accomplishment, there is every incentive for teachers to allow pupils to do original and creative work; and this opportunity is not lost. It is common for children to set up aims, to organize their activities, to suggest subject matter or experience that forms the basis for their play and work, to choose songs, stories, games, and materials, and to lead in many of the undertakings.

While this seems to be the dominant tendency, it is also evident that in quite a number of the kindergartens dictation exercises and ready made play, that require complete submission on the part of the pupil, are so prominent that they directly oppose self-expression and self-reliance.

On the whole, there are two very distinct currents observable in the kindergartens. The one represents a slavish devotion to the adult point of view in the selection of subject matter, and to adult logic in its presentation, resulting in rigid organization, ignoring of relative values, and neglect of the child himself. The other shows the opposite tendencies. Which of these two shall finally prevail is a matter of grave concern, requiring the constant watchfulness of citizens especially interested in this field.

But, at present, we feel little hesitation in saying that the kindergarten, as a whole, meets the test of the four standards set up in a satisfactory manner; and that, therefore, the instruction there rests on the higher plane, i. e., it is good at present, and promising for the future.

### Quality of Instruction in the Elementary Schools

#### a. The New York City Working Theory for the Elementary Schools

Back of the multitude of ideas and practices related to the elementary schools there are four convictions that are remarkably prevalent. One pertains to the necessity of uniformity, and the thought runs thus:

There are approximately 14,000 teachers in the elementary schools. That is an enormous number. All reports in regard to them, all communications to them, must be systematized. All plans to influence them must be made for the mass.

There are approximately 650,000 children in the elementary schools, sometimes over 4,000 collecting in a single building. The absolute necessity of mass action in fire drills is self-evident; its reasonableness in filling and emptying buildings, under ordinary circumstances, as well as its need in the external handling of the large classes, is likewise evident.

Turning to the instruction itself—if teachers must be rated for advancement, as they must, instruction must be standardized; if the children must be rated in their attainments, as they must, the results of instruction must also be standardized; hence, one curriculum, one time allotment for studies, one method, for all the schools; that, so far as possible, is a necessity! The degree to which standardization is established, and mass action secured, is one of the measures of efficiency.

The second conviction pertains to the essence of the course of study. A curriculum may and, no doubt, should contain many things, of many kinds; but its very core is found in those facts and those kinds of skill that can become automatically usable.

The third conviction pertains to the factor in scholarship that is most worthy of emphasis. Many things are necessary to proper study, but the most desirable element is accuracy in details.

The fourth conviction pertains to the time when the pupil may be expected to use what he learns in school. Of course, some things that are learned, such, for example, as writing, reading, a few facts in geography and in shop work, are usable immediately. But that is accidental. The school period, on the whole, is a period of storage for the unknown future; it is a period for collecting facts without reference to their present use.

Here, then, is the shorter educational theory of the elementary schools:

- a. On account of the size of the system, there is scarcely a limit in the extent to which uniformity is necessary.
- b. The principal subject matter of instruction is what is automatically usable.
- c. The leading element in scholarship is accuracy in details.
- d. The time for the pupil to use his knowledge acquired in school is the distant future; not now.

Of course, this theory is not universally accepted; heretics are to be expected in any denomination. Some striking exceptions to its spirit are found in the variety of text-books, for each study, allowed in the schools; also in some very prominent movements within the system, as in the special classes for defectives, the outdoor classes, and the individual care of children touching their physical defects. In addition, many of the teachers and principals are reluctant supporters of the theory. But a majority of both seem at least reconciled to it; and most of the superintendents are evidently ardent in its support, inasmuch as it originates with them. This theory helps to explain the quality of instruction, as we shall see later.

#### **b. Effect of Instruction on Children's Purposes**

Take, now, the relation of the teaching to the ambitions and plans of children.

Although problems, as they arise in daily life, are the main stimulus to the thinking that goes on in the world, the center of plans and purposes, the instruction in the schools is not usually organized around such centers. In composition, for instance, it is rare to find pupils writing with any purpose beyond satisfying the teacher. Grammar does not pretend to make young people conscious of new objects in life. Geography consists merely of facts that one may some day want—but not now; arithmetic represents the same viewpoint.

Even in those subjects that naturally appeal to the imagination and enthusiasm of children, like literature, music, and shop work, there is a strong tendency to ignore the child's attitude. The recitation in literature, described on p. 226, in which the accurate enunciation and pronunciation of individual words were the principal things talked about, is an example. Music plainly subordinates the children's motives to sight reading, and the shop work in the 8th grade allows the sequence of tools and of materials rather than child nature to determine the choice of objects to be made.

It is always to be kept in mind that there are striking exceptions to the general statements here made. But, judging from the instruction observed, there is reason for believing that, in general, the inculcation of purposes in pupils, through instruction, is scarcely thought of in the actual classroom work.

#### **c. Effect of Instruction on Children's Organization of Ideas**

When we turn to the organization of subject matter, we find certain studies, such as beginning reading—when the Ward method is used—arithmetic, music, and most of the work in construction, standing for a sequence that is rigid. While sequence, as an element in organization, is a good thing, this is a sequence of the scientist, not of the child; and



it usually has little effect upon a child's thinking, beyond causing him to dislike the subject.

The chief way of testing the influence of instruction on children's organization of ideas is to examine into the character of their responses to the teacher's questions. If these responses are pointed and forceful, the pupils have gotten into the habit of looking for a central thought—such as an underlying cause in history or geography—grouping their facts around it in sequence, and in considerable number. If they have not succeeded at this, but are striving in this direction, the efforts will easily be observable. Also, if the teacher is attempting to influence them in this respect, the fact will be shown in the pointedness and, particularly, in the scope of her questions.

Our visits to classrooms furnished no evidence that stress was being laid upon this matter. The responses of pupils were almost invariably brief and scrappy—a condition directly favored, rather than opposed, by the character of the teacher's questions.

#### **d. Effect of Instruction on Children's Weighing of Values**

In visiting schools it is very easy to observe whether or not much attention is given to relative values. But the writer visited twenty classes, in several different schools, before noting the slightest reference to the worth of things. Then a teacher in a reading class, feeling dissatisfied over the rendering of a certain sentence, said, "You do not seem to understand which word is most important in that sentence. Which one is, do you think?"

The prevailing attitude was that each thing taught, every fact, was taught because it was required; the curriculum called for it. Being necessary, then—in fact, absolutely necessary, practically speaking—what reason was there for stopping to discuss its relative importance? That would be superfluous! What was wanted was *results*; and there was no time to lose.

#### **e. Effect of Instruction on Children's Initiative and Self-Reliance in General**

It is by no means easy to show how, in the teaching of a given topic, the exercise of initiative can be transferred—from the teacher—to the class. But whether such a transfer is taking place, or whether, at least, it is being attempted, is very easy to see. Judging from the practice observed, there is, as a rule, almost no planning for the pupil's growth in self-reliance or self-expression. The teacher puts the questions, makes the corrections, and immediately directs every turn that is made.

In handwork, for example, we find a situation that seems typical. Pupils there are not allowed to experiment. To a boy suggesting another possible way of doing something an instructor was heard to say, "If you

know a better way than mine, walk right up and instruct the class." Sarcasm is the deadly weapon often used by numerous shop men to wither any initiative or originality that does appear, and to reduce boys to uniform subservience and docility.

Dictation, as a method of instruction in shop work and drawing, is very prominent. The children are told what to do and how to do it. Telling is reënforced by demonstrations. Usually when pupils cannot follow the verbal instructions of the teacher, they may follow or copy drawings, or detailed instructions from blackboards, charts, models, or notes.

In design there is practically no opportunity for initiative, save in choice among several designs offered in a few of the schools. Original designs have no place in the present plan. Slight variations in finishing or decorating some sewing projects, some selection as to colors used in weaving in the lower grades, slight opportunity for choice of models offered to be drawn, and some variation in the finishing of the pieces of shop work in the latter part of the course are permitted. But the limitations are so stringent that variation is discouraged rather than encouraged.

The New York City elementary schools, on the whole, are not attempting to develop the initiative and self-reliance of children through instruction.

#### **f. Conclusions in Regard to Quality of Instruction in Elementary Schools**

Thus, not one of the standards proposed for judging instruction is satisfactorily met. Indeed, the working theory, above mentioned, shows attention to be systematically directed *away* from these standards.

Take, for example, the first article in that theory—the belief in uniformity. Its influence is directly opposed to the development of individuality in children; variety is not obtained through uniformity.

Take the second article—the belief that what is automatically usable constitutes the core of the curriculum. That belief throws the main emphasis on the formal or mechanical portion of the subject matter; i. e., upon symbols in the three R's, location and map drawing in geography, dates and minor details in history, reading of notes in music, names and superficial description of objects in nature study, and technical processes of construction. That is just the kind of subject matter that is commonly recognized as deadening to motive, rather than a source of it. It is a very necessary part of a curriculum; but it must be subordinated to other subject matter and carried by it, if the instruction is to be inspiring.

Take the third article of the theory—that the leading element in scholarship is accuracy in details. That belief tends to divert attention from the grouping of facts according to their relations, to the isolated, individual fact. And, special merit being attached to details or little

things, the larger truths, such as must be considered in the principles of the various studies, in the deeper causes, in summaries, and in broad questions from the teacher, all of which are based on an extensive association of ideas, are at a discount.

And, finally, take the fourth article—that children are to acquire their knowledge, not for present use, but for the unknown future. That belief, to the extent that it is acted upon, in the selection and presentation of subject matter, destroys both the motive for the weighing of values, by children and the basis for doing it. For the worth of ideas is determined by the degree to which they are significant in one's life; but, if they are not significant at the time they are acquired, there is no reason for evaluating them; and there is no relation to them close enough to allow one to perceive their worth.

We do not assert here that the value of a child's knowledge is confined entirely, or mainly, to its present use; nor that children are unable to use, and should not use, their imaginations, so as to project themselves into the future, and look at matters somewhat from the social viewpoint. But we do say that, if children are to consider the value of knowledge, they must feel its present significance to them.

In general, the standards that we have proposed test instruction by the extent to which, through the acquisition and application of knowledge, it affects the growth of children in those mental processes or habits that count most in actual living.

On the other hand, the articles of the working theory above referred to are not plainly concerned with the growth or development of children; they direct attention primarily to finished products in the way of knowledge and technical skill.

According to the standards proposed for judging instruction, that now given in the New York City elementary schools is—in spite of many exceptions—on a low plane, poor in quality, and discouraging for the future.

It is very important to bear in mind, however, that this instruction is no worse than that found in many other places. If different standards had been adopted—in fact, such as have usually been applied in judging schools—very different conclusions might have been reached. But, if one accepts the standards proposed, one must come to the conclusions reached.

### Attitude of Teachers

A matter intimately connected with the instruction, and helping to explain its quality, is the attitude of the rank and file of the classroom teachers. That attitude is not satisfactory and their thought, according to our findings, runs somewhat as follows:

In the first place, they are hampered by lack of authority either to punish unusually troublesome children adequately, or to have them punished. The result in many a room is a constant struggle to "get on some

way or other," leading to limitless waste of time and energy, and not seldom to loss of health by the teacher.

In the second place, they do not feel free. They are given no authoritative voice in helping to select the curriculum that they must present, or in dividing the time among the several studies, or in choosing the textbooks that they use, or often, even, in determining the methods that they follow. On every hand they are directed what to do, and how to do it.

One reason for these many limitations is the fear, on the part of the higher authorities, of serious blunders by weak teachers. But the effect is that the teachers, as a body, are treated as weak teachers, and distrusted.

Under these conditions, they cannot be expected to develop the initiative and individuality of their pupils; they are not allowed initiative or self-expression themselves; obedience is their leading merit; there is little provision, in the entire system, for their own individuality. More than that, any independent efforts that they might make in the direction of organizing subject matter in a new way, or of stressing relative values to an unusual degree, or of providing for motive in an original manner, would run the risk of disapproval by their superiors.

In the third place, there is lamentable lack of inspiring leadership by those persons in authority over them, i. e., the principals, special supervisors, and superintendents. The main relation of superintendents to them is that of inspectors merely, or judges, not of helpers; and the principals are too busy with other matters, or unable, for other reasons, to come to their aid in a vigorous, constructive manner. In consequence, no one in the system is discussing aims and principles with them and showing how these should affect their teaching.

This is the expression of convictions held by teachers. There are many exceptions, partly due to the school, and partly to the individual. But our findings convince us that such exceptions are unusual. Our findings further convince us that the teachers, as a rule, are conscientious and energetic; also, that, in respect to their profession, they are static and depressed.

Whether or not the attitude of the teachers is justified will be, at least in part, revealed later, particularly when the curriculum and syllabi for the elementary schools, the supervision by principals, and the work of the superintendents are under discussion.

#### **D. Recommendations**

##### **1. On Unification of Kindergarten and Primary School**

There is a striking contrast between the kindergarten and the elementary school, as the two are now conducted. The key to the difference is found in two facts; i. e. (a) that the acquisition of knowledge is regarded as a mere means to larger ends, in the kindergarten; while it

is made the dominating purpose—the end itself—throughout the primary school; and (b) that the knowledge acquired in the kindergarten is chiefly that which can be a source of inspiration; while that chiefly emphasized in the primary school consists of symbols and formal facts, as, for example, in the three R's and spelling.

The result is that these two parts of the system fail to harmonize. Indeed, they are so unlike in controlling purposes, curriculum, methods of presenting the same, attitude of the teachers toward pupils, and even in the appearance of the rooms, that the primary school not only abandons important lines of influence begun in the kindergarten, but tends to nullify them. Such a dualism in the theory and practice of educating children—within a single system—is most wasteful.

Beyond doubt, there is a real difficulty here, in the fact that a time must come—usually recognized to be at about six years of age—when symbols must be attacked with vigor. But that is insufficient reason for the almost complete abandonment of valuable influences for the development of habits that it has required one, two, or three years to establish. Both plans can hardly be sound; and, according to the standards used for judging the quality of instruction, it is the elementary school that needs the greater modification. The question for serious study, therefore, is: Can the elementary school continue the main lines of work begun in the kindergarten, while giving mastery over symbols?

## 2. On Limiting the Tendency Toward Uniformity

The extent to which uniformity is necessary in a great system of schools is one of the most important questions among those suggested in this part of our report.

Possibly, there cannot be too much uniformity of procedure in the business management of the schools, and there are weighty arguments in favor of a great amount of it in instruction. On the other hand, according to the common conception of educators, excellence in method of teaching consists in the close adjustment of subject matter to individual experience and peculiarities. It is thus conditioned by the highest degree of diversity in practice. Uniformity is hardly the means of securing this diversity. A system of schools, therefore, in which uniformity is believed in and practiced, without much limit, cannot be expected to reach a high degree of excellence.

## 3. On the Status of the Classroom Teacher

The authority of the classroom teacher should be more definitely fixed. If obedience is to be one of her (his) principal virtues, then everyone concerned should understand that fact. On the other hand, if a good degree of freedom on her (his) part is recognized to be necessary, as a condition of developing self-expression and self-reliance among

pupils, and of securing the teacher's own growth, then a well-developed plan by which freedom is guaranteed should be put into print. Such a plan might do much to allay present discontent among the teachers. At any rate, the task rests upon the higher school authorities to discover the reasons, and the remedy, for the present dissatisfaction among the teachers. There is no doubt about its existence.

#### 4. On Discipline of Unruly Children

The question of the discipline of unruly children seems to us one of those that most urgently demand attention.

In consequence of the great size of most of the schools, there are sure to be, in almost every one of them, a few children who are boldly and persistently disobedient. Some of these are more or less rowdyish and insolent, but hardly vicious; others approach the criminal in character—sometimes attempting to start a panic in fire drill, by shouting and running; sometimes using foul language to the teacher or throwing a book or a knife at her; sometimes remaining away from home, in bad company, three or four nights at a time; sometimes beating their mothers, and frequently defying both classroom teacher and principal outright.

A small percentage of these, the very worst, are now provided for in the school for truants in Manhattan, the disciplinary school in Brooklyn, and the parental school in Queens. In order to have them transferred to one of these schools they must have a hearing before the district superintendent, and the sentence to commitment must be approved by the parents, and also the city superintendent of schools. Or the unruly child may be sent to the children's court for trial and sentence.

But under present conditions not many of these children are likely to be disposed of in this way, for several reasons:

- a. These schools can accommodate only a small number at best; and it does no good for the District Superintendent to recommend the commitment of a child to such a place, if there is no room for him there.
- b. There is no certainty of promptness in the settlement of such cases—for various reasons; nor is there certainty of a final sentence. For example, no pupil may be committed who is suffering from defective nasal breathing, and the like, until he has been subjected to operative treatment and time has elapsed to allow for a possible cure. Also, there seems to be an unwritten tradition that a pupil shall be tried in three different schools before being sentenced to one of those above named. The delays and the uncertainty of the outcome—we are assured—hold about the same in these cases as in our criminal courts.

- c. The principal has special reasons for bringing very few such children to trial. For, if he does bring one, he must spend much time in preparing and presenting the case; he and his teachers must be placed on the same plane as the pupil in offering evidence, so that not seldom they themselves, rather than the pupil, seem to be on trial; he cannot but fear that his district superintendent, whose rating influences promotion and rank, will consider him incompetent in management; and he is very likely, finally, to be instructed to take the child back and "give him one more trial," or to transfer him to another school.

Thus, in spite of much trouble and humiliation on the part of the principal and teachers, the pupil may seem to be sustained and the influence of the principal himself throughout his school undermined as the result of such a hearing.

- d. Finally, it is very plain to teachers and principals that the transfer to one of these schools is not at all what many of these children most need. A large portion of them are only semi-incorrigibles, capable of being saved from commitment, if effective punishment were allowed on the spot.

Considering the city as a whole, therefore, there is a large number of children—a few in this school and a few in that—who are extremely disobedient and disorderly—often defiant—who must be kept within the school; there is, practically, no other provision for them. They have little respect for authority; little regard for the rights of others; and little fear beyond that of bodily hurt. What can and does the principal now do to control these?

First of all, neither he nor the classroom teacher may *touch* them in way of administering punishment. A by-law of the Board of Education forbids that. And these children are as well acquainted with that by-law as are their teachers themselves. In fact, they have not infrequently dared a teacher or principal to lay hands on them, threatening, in that case, to report the action to the Board of Education, to have them fined, etc.

The principal, then, can try moral suasion, can appeal to the parent, and use many other ordinary means for securing control—which will sometimes prove successful, in spite of the hardened condition of the pupils.

Or he can make threats of things to come—awful but vague—and untrue—and sometimes succeed in that way.

Or he can do any one of four other things:

- a. He can make use of ridicule or sarcasm; or can torture children by placing them in unnatural positions, standing or sitting, until they approach exhaustion.

- b. Or, in righteous indignation over a pupil's intolerable conduct, and in defense of his own self-respect, or that of a teacher, he may chastise a pupil vigorously, running whatever risk of later punishment himself that is necessary.
- c. Or, taking a child off by himself, away from all possible witnesses, he may mete out to him all the punishment that he thinks is deserved. Being alone, the pupil can never prove anything against him.
- d. Or, finally, he may "smooth over the case," or ignore it outright, leaving the responsibility upon the classroom teacher of getting on with each pupil as best she can.

As a result of numerous conversations with teachers and principals, and of correspondence also, we are convinced that all four of these methods are rather common, while the last is most common.

The results are of the gravest character:

Saying nothing of the fact that to many pupils punishments more cruel than corporal punishment are applied, and that the by-law forbidding corporal punishment is often ignored, the great fact is that many classroom teachers are at their wits' end every day to discover how to give instruction while certain pupils constantly cause disorder. A large portion of their time and energy is expended merely in trying to get on with such pupils, until ill-health results from worry and exhaustion.

Although any educational system that enforces compulsory attendance is under obligations to protect each pupil, not only from physical, but also from moral contagion, it is a fact that the great majority lose, correspondingly, through no fault of their own, while observing examples of disobedience that are extremely injurious.

Finally, the troublesome pupils, themselves, conscious of the powerlessness of their teachers, become confirmed in lawless habits in the very place that is intended to teach them to observe the rights of others; and these lawless habits, carried into after-life, lead directly to the lawless gangs and rowdy conduct so common to-day.

Convinced of the seriousness of these facts, we make the following recommendations:

- a. That the by-law of the Board of Education expressly forbidding corporal punishment be rescinded. The state law touching assault and battery sufficiently covers cases of unwarranted severity toward pupils.
- b. That the number of parental schools for the most depraved children be increased, in which the inmates shall be under constant confinement; also that the number of disciplinary schools be increased, in which the inmates shall be confined throughout the day. That the mode of commitment to these schools be greatly simplified; that a special curriculum be allowed in each of these schools, peculiarly fitted to the needs



of the pupils; and that corporal punishment be allowed in them.

c. That, in other schools (a) the principal and the few persons to whom he may delegate the right, shall have authority to use physical force with pupils; or, when it is deemed advisable by the principal, one or more classes composed of troublesome children shall be formed, after the type of the present ungraded classes; and that in these special classes the principal and the teachers of such classes to whom he delegates the right, shall have authority to administer corporal punishment.

d. That corporal punishment be inflicted only under the following restrictions:

- (a) That each child first receive a medical examination;
- (b) That, if possible, the written consent of the father or guardian be secured;
- (c) That such punishment be applied only in the presence of some adult witness;
- (d) That accurate records be kept of all cases of such punishment, together with the conditions that led to them and the mode of its administration.

We are convinced, from the data we have been able to gather, that these recommendations possess the following advantages:

- (a) That the number of attempted commitments to institutions would be greatly diminished, thereby avoiding a great waste of time and energy on the part of district superintendents, principals, and teachers.
- (b) That the mere knowledge on the part of the unruly pupils that they may be subject to corporal punishment for their wrongdoing will of itself make actual punishment unnecessary in a great majority of cases.
- (c) That the number of cases of corporal punishment in the city will be reduced below the number at the present time.

### 5. On the Aims of the Elementary School

The foregoing conclusions declare that, in general, the instruction in the elementary school is poor. It would hardly be so unsatisfactory, as it is, if the working aims themselves of the school were not so low. The most depressing fact about this part of the investigation has been our inability to discover either any general striving toward the higher aims of instruction or even signs of such general striving. Such signs, at least, would be in evidence, if broad purposes controlled the field. This fact emphasizes the importance of a formulation, by the school authorities, of the main objects elementary instruction should aim to accomplish, in terms that are significant to teachers and laymen alike, and that breathe a broad spirit.



THE COURSE OF STUDY

FRANK M. McMURRY

SUBDIVISION I

ELEMENTARY SCHOOLS

SECTION B



## TABLE OF CONTENTS

	Page
<b>A. Standards for Judging Value of Curriculum and Syllabi</b>	
Prominence of curriculum in determining quality of instruction	265
Bases for judging curriculum and syllabi	
1. By relation of subject matter to children's purposes . . .	265
2. By their tendency to call forth the initiative of teachers and children . . . . .	266
3. By the kind and degree of organization of subject matter	266
4. By attention to relative values . . . . .	266
Curriculum and syllabi on two different planes . . . . .	266
<b>B. Application of These Standards</b>	
1. The kindergarten . . . . .	267
2. The elementary school	
a. Reading and literature . . . . .	268
b. Composition and grammar . . . . .	272
c. Spelling . . . . .	277
d. Music . . . . .	279
e. Nature study and elementary science . . . . .	283
f. Arithmetic . . . . .	287
g. Drawing, construction work, cooking, and sewing . . .	294
h. Geography . . . . .	298
i. Physical training . . . . .	305
j. Hygiene . . . . .	311
<b>C. Conclusions as to Quality of Curriculum and Syllabi of the Kinder- garden and Elementary School</b>	
1. The kindergarten . . . . .	316
2. The elementary school	
a. Source of data for conclusions . . . . .	316
b. Provisions for motive . . . . .	316
c. Attention to relative values . . . . .	317
d. Attention to organization . . . . .	317
e. Provision for expression of individuality of teachers and pupils . . . . .	318
f. Standards actually followed in the present curriculum and syllabi . . . . .	320
g. Effect of the curriculum and syllabi on the attitude of teachers . . . . .	321
h. Effect of curriculum and syllabi on instruction in the elementary school . . . . .	322
<b>D. Recommendations</b>	
1. As to minor changes . . . . .	323
a. Technical grammar . . . . .	323
b. Nature study . . . . .	323
c. English history . . . . .	323

	Page
D. Recommendations (Continued)	
1. As to minor changes (Continued)	
d. Arithmetic . . . . .	323
e. Correlation of studies . . . . .	324
f. Course for the seventh grade . . . . .	324
2. Adjustment of the curriculum to the needs of individual schools . . . . .	324
3. Character of syllabi . . . . .	327

# CURRICULUM AND SYLLABI OF THE KINDERGARTEN AND THE ELEMENTARY SCHOOL<sup>1</sup>

---

## A. Standards for Judging Value of Curriculum and Syllabi

### Prominence of Curriculum in Determining Quality of Instruction

Thirty years ago the belief was often expressed that it made little difference *what* one studied, but all the difference in the world *with whom* one studied. That belief made almost any curriculum acceptable, and directed attention to the personality of the teacher and to *method* as the principal factors determining the effectiveness of instruction.

That belief, however, has been greatly modified. While no one will deny the importance of the teacher's personality, most persons will admit that the proper expression of personality and skill in method are both greatly dependent upon the subject matter of the curriculum. Carefully selected subject matter is prerequisite to skill in method of presentation. Without a good curriculum there is bound to be great waste.

### Bases for Judging Curriculum and Syllabi

#### 1. By Relation of Subject Matter to Children's Purposes

In harmony with the previous discussion of standards for judging the quality of instruction, as a whole, the quality of the curriculum in particular is to be determined partly by its tendency to influence the tastes, purposes, and hopes of children. Any curriculum for the elementary school should have its content selected from among those experiences of mankind that have seemed most valuable. That is to be presupposed. But this selection can be indifferent to the tendencies, interests, and capacities of children in general, and of certain ages in particular, and aim only at present storage of facts and ideas that may count in a dim future, *i. e.*, in adult life. Or it may be made with constant reference to the abilities, tastes, and needs of children at the present time. In the former case, motive on the part of children is overlooked; in the latter case, the extent of provision for it is accepted as one of the standards by which the curriculum is to be judged. We represent the latter point of view.

<sup>1</sup> While it was intended to include all the subjects of instruction in this study, lack of time compelled the omission of history and civics, penmanship, and foreign language.

## **2. By Their Tendency to Call Forth the Initiative of Teachers and Children**

A further basis for estimating the merits of the curriculum and syllabi is found in their attitude toward the exercise of initiative on the part of teachers and pupils. The syllabi in particular—being an interpretation of the curriculum and in addition containing suggestions on method—may show the subject matter to be so attractive as to directly invite attack by children. Also, they may suggest so many different sequences of topics, and other procedures requiring choice, that they surround both teacher and pupil with an atmosphere of freedom, and thus directly favor the exercise of initiative on the part of both. Or they can offer a skeleton so bare that it repels all who behold it; and they can so insist on certain suggestions of sequence and other procedures by offering no options and by repeated reference to such sequence and procedure as desirable, as to surround the teacher and finally, through her, the pupil with an atmosphere of restraint that tends to suppress all originality.

## **3. By the Kind and Degree of Organization of Subject Matter**

The first great condition of the proper organization of ideas in the pupil's mind is that they be well organized in the curriculum itself. If they be scattered there, it is too great a task to expect the classroom teacher to establish order among them before putting them before children. One of the first characteristics of a good curriculum, therefore, is avoidance of isolated facts. In general, whatever items of a study cannot form a necessary part of some valuable whole must be omitted; and those that are accepted should have a recognizable place in a series of ideas, with cross relations or correlation with other studies.

## **4. By Attention to Relative Values**

Finally, the value of both curriculum and syllabi is to be judged by the emphasis they succeed in placing upon the more vital and real parts of each branch of knowledge in comparison with that placed upon the less important and more formal portions. Every study contains a multitude of minor facts that any one is expected to know, such, for instance, as dates in history, locations of places in geography, and pronunciation and meaning of individual words in literature. These can stand out so prominently as to seem to constitute the body of the study; or they can be so subordinated to what is fundamental that the latter is made to carry the former and constitute the bulk of the subject matter. To the extent that this latter object is effected the curriculum and syllabi satisfy one important test of excellence.

## **Curriculum and Syllabi on Two Different Planes**

In discussing standards for judging the value of classroom instruction (page 222), it was shown that, according as instruction met the



tests proposed, it belonged to one of two planes. The same holds true with reference to the curriculum and syllabi. Probably no curriculum in existence ideally meets any one of the four tests we have employed. Yet some of them, in some of their parts, attain one or more of these standards to a remarkable degree; and in many of their parts show partial success in the same direction. Others scarcely show signs of any striving toward these standards. It is, therefore, their partial successes, and the endeavor they show to achieve such successes, that make the distinction between acceptable curricula and syllabi and those that should be condemned. Those are considered good that show excellence at many points and promises of improvement; and those are considered poor that ignore these standards.

## **B. Application of These Standards**

### **1. The Kindergarten**

There is at present no definite and uniform curriculum or program for the kindergarten. The only way, then, to judge of the character of the program most commonly in use is to apply standards of worth to what one sees in the various kindergartens. Certain features are prominent in all, such as songs, stories, bodily activity, including rhythmical movements, and games, and much use of materials in arranging, designing, and constructing. Just what ideas are to be conveyed by, or developed through, these activities; just what experiences are to be given or deepened by them; just what habits are to be established, seem to rest largely with the individual teacher.

#### **Provision for Motive**

In most of the kindergartens visited, the body of thought which gave direction to the activities was close to the children, and of such nature that purposes would naturally arise and be carried over into home life and outside play life. Prominent topics were the child's relation to family and friends, to animals, to industrial workers and tradespeople, and to public servants. Attention was frequently directed to small services the children might render, and ambition was aroused to acquire skill or power in order to win certain positions of trust and responsibility within the group. The things the children made also frequently gave a considerable degree of continuity and fixity to their purposes.

#### **Provision for Organization of Subject Matter**

The kindergarten program always shows attention to organization. Some teachers provide for a distinct correlation running through song,

story, nature work, rhythm, games, gift work, and occupations. Others correlate part of the activities, and depend on the sequence of materials to afford the ordered presentation of others.

### Consideration of Relative Values

The children are more frequently called upon to judge of the desirability of certain acts or modes of doing than of the worth of facts or ideas. The values which are kept prominent, therefore, are of a dynamic kind, and, to a large extent, the children's incipient powers of judgment and discrimination are called out in connection with matters on their own plane.

The teacher's own sense of values is, of course, very influential, for if she seems to attach more importance to such matters as technique, precision, and exact imitation than to initiative, originality, suggestive variation, and ability to work out problems, then the former types of excellence are those which the children will soon place uppermost. There is evidence that in some quarters these more formal values are being overemphasized.

### Provision for Individuality

That the curriculum does not limit the teacher's freedom is evident from numerous facts. Pride in the appearance of the room, arrangements for comfort, conveniences, and æsthetic effect, the presence of objects calculated to arouse interest and stimulate thought, variety in the subject matter—all show initiative and zeal on the part of kindergarten teachers. Unusual interest is displayed also in the individual child, and it has been found that the kindergartner almost always knows the personal history of any child singled out.

Since self-activity is one of the cardinal principles of the kindergarten philosophy, we should expect to find no lack of opportunity for the exercise of initiative on the part of the children. That such opportunity is provided, so far as the curriculum is concerned, is plainly shown in the fact that the work undertaken is, with the exception of stilted gift work here and there, selected with much reference to children's tendencies. Such subject matter abundantly favors the exercise of initiative and the expression of individuality in other ways.

In brief, the kindergarten curriculum, as a rule, is so plainly determined by reference to the chief aims of the school, as expressed in the four standards proposed, that it greatly aids the kind of classroom instruction that can meet those standards.

## 2. The Elementary School

### (a) Reading and Literature

It is safe to assume that the general object of this portion of the course in English is to introduce the pupil to the main lines of reading

that one who goes no further than the elementary school may be expected to pursue; and to do this in such a way that the reading may be intelligent, appreciative, and habitual.

The range of subject matter, therefore, should include both classic literature and, to some extent, current publications, such as newspapers and magazines. The main problems are to make such selections from within this field as will appeal strongly to the individual pupil; and then to present them in a way that will subordinate the symbols to the thought.

### Provision for Motive

The quality of subject matter listed in the curriculum is excellent; there are only two objections that need be considered here. One is the narrowness of the offering. A stranger looking through the list is likely to be impressed with the neglect of current literature. If one important object of the English course should be to identify the pupil with such literature, i. e., to appeal to his interest in the newspaper, magazine, etc., and develop that interest further, so that his tastes there will be good, and his method of reading intelligent, then these kinds of subject matter should be more prominent than they are.

The other objection is the utter impossibility of securing the fullest adaptation of literature to individuals when the 650,000 pupils of Greater New York, living in radically different local environments and homes, are expected to cover substantially the same subject matter at substantially the same rate. The whole trend of modern education, in its emphasis on individuality, is opposed to that plan. In literature, in particular, where the development of taste is so important, differences in individuals should receive special attention. Boys often need selections different from those for girls; some children need to devote twice as much time to stories as others; a few 8th-grade pupils may be able to read Shakespeare and the Webster and Hayne debate with profit; but many cannot. Any teacher has her preferences, and can teach some selections with far greater effect than others. Why should all such facts as these be, in the main, ignored when the very definition of good teaching signifies adjustment to individual conditions?

In provision for the subordination of form to thought, in beginning reading, the syllabus shows breadth. Ideas over the country vary a good deal in regard to this problem, and teachers, while practically being urged here to let the thought lead, are left free to follow their own will in method. One striking exception is in the syllabus for Grade 1A in the direction that ". . . Daily lessons should be given on the sounds of single letters and combinations of letters." Many an excellent teacher would feel this requirement to be a direct barrier to her success in awakening interest. No doubt it is greatly needed in some classes. But that is not a good reason for requiring it in all.

The statement in Grade 4A that "Pupils should be trained to depend

largely on the context for the meanings of words" contributes greatly to motivation of the pupil, being based on principle. But its spirit is almost directly opposed in 2B, where the request is made that "exercises that will insure the prompt recognition of the form and an understanding of the meaning of new words" should *precede* the reading. That signifies *formal* work.

The frequent suggestions favoring the teachers' reading before their pupils are excellent, since good oral reading by the teacher is recognized as one of the most effective means for inculcating a love of literature.

Yet, taking the syllabus as a whole, there is a striking overemphasis of the minor parts of good reading, i. e., of form, in distinction from thought. For example, the number of new words to be acquired in a half year is so frequently mentioned, and phonic drills and distinct enunciation are made so urgent, that one rather easily gets the impression that these things, taken together, mean good reading. This conception, no doubt, to a considerable extent accounts for such recitations in reading as that in the fifth grade described on page 226, where each child was allowed to read only a single sentence, and his general ability to read was judged by the accuracy with which each word was enunciated and pronounced. That plan directly checks motive on the part of pupils.

#### Attention to Relative Values

This last point brings up the question of relative values in general. How about the relative importance of silent reading, for example, in comparison with oral reading? Most of the suggestions on method in the syllabus concern the latter. Yet, judged by the prominence of silent reading outside of school, and after school life is over, a large part of the reading in school might well be silent. The task then would be to show wherein good silent reading consists. The syllabus shows some comprehension of the importance of this matter, since silent reading, without reference to oral reading, is recommended in Grade 2B, and referred to several times later. But the test suggested for silent reading, i. e., ability to express the substance of the thought, is very inadequate. Any one must admit that reading merely to know what an author says is passive, and scarcely admissible in real study outside of educational institutions. Therefore, one of the important questions is: How is the school to prepare for the more aggressive kind of silent reading? It is to be regretted that the syllabus does not place greater emphasis on silent reading, and show its desirable characteristics far more fully.

The syllabus makes admirable suggestions about reading for "essential meanings" in Grade 6B, and directly recommends the neglect of minor matters in Grades 7 and 8 for the appreciation of the larger features. But why not similar suggestions in earlier grades? In second reader selections, for example, some portions of a story are usually more important or finer than other portions. Should not children be taught

to locate these greater values almost from the beginning of school life, and thus establish the habit of being selective? And, recalling remarks above, should not such judgment about values be expected as an essential part of silent reading? More than that, should not judging of the relative worth of such books, stories, magazines, and newspaper articles as boys and girls read be made a regular part of school work in English from about the fifth grade on? The temptation among children to read trashy literature and to listen to degrading stories is common. It is, therefore, important to cultivate the power to distinguish between what is coarse and what is fine, and between good and bad.

### Attention to Organization, and Exercise of Initiative

The plan for the work in English is to be commended for not attempting to group selections according to some central idea, for the way is not yet clear to do that with much effect. The organization of the particular selection is, therefore, the only kind of organization to be considered here; and, since that is already provided for by the author, those who plan the course need not concern themselves further about the matter.

As to provision for the exercise of individual initiative by teacher and pupil, the situation is by no means so simple or satisfactory.

By the time the seventh year of school is reached, the pupil himself should be able to determine, to a large extent, what should be done with at least a good portion of the selections assigned to him for study. How, otherwise, is he learning to read independently and intelligently outside of school?

But, if this object is to be accomplished, the beginnings of the exercise of such independence must have begun very early in the grades. That is, the children must early have learned to put some of the necessary questions, as well as to answer them; they must have learned to select the more valuable parts, and make fitting remarks about them. That means that the teacher, from the first year of school, must have labored to cultivate the pupils' initiative, keeping herself in the background. The silence of the syllabus in regard to this whole matter—consideration of which might well constitute a full half of all thought on method—leaves one in doubt whether the *growth* of the pupil toward self-reliance is the aim here so much as mere knowledge, and such a doubt no syllabus should allow.

There is some reference in the syllabus to "informal talks on books read at home" (in 6A); but the extent to which pupils should follow their individual preferences in their reading, and use the recitation period for reporting upon the same to the class, is a far more important question than is indicated.

In the higher grades there are definite suggestions as to how many times we need read a masterpiece for appreciation, which is apparently

two times in Grade 6B and three times in Grades 7 and 8. The danger of thus giving specific directions without reference to the principles involved and to the kind of selection is well illustrated in this case, for such directions, presented so arbitrarily, are bound to produce a mechanical effect. Many good selections are not the kind that one needs to read three times, as, for example, Longfellow's "Hiawatha." Or, if one reads them three times, it would not be in the ways described. A hasty, more or less careless, first reading of a long selection is often one of the worst introductions to a classic; yet the instructions in the syllabus have caused that practice to be quite common in New York City. The difficulty with the syllabus at this point is that it suggests uniformity in detailed practice, while the only uniformity admissible is that in aims and principles. If the syllabus had stated the few leading aims and principles involved in the teaching of literature, and then had shown, by a few illustrations, how they variously affect practice, according to conditions, it would have given most valuable help. As it is, it tends rather to limit the freedom of teachers to study individual conditions and adapt both subject matter and method to them.

### Conclusion

In general it may be said that the selection of subject matter for reading and literature is good so far as it goes; and many of the suggestions on method are valuable. The main defect is that the point of view in making selections is narrow, omitting much that should have been included; and in offering suggestions on method the syllabus is arbitrary.

### b. Composition and Grammar

#### Provision for Motive

The first condition of success in composition is the real desire to say something. A certain private school, wanting the anniversary of Lincoln's birthday, as well as Washington's, for a holiday, determined to send in a petition to that effect to the principal. This need furnished the stimulus for competitive letters written by all the pupils of several rooms, and the best of the letters were forwarded to the principal.

One of the public school principals in this city has a collection of compositions, recently received from boys, telling of their experience in collecting stamps. There was a real purpose in writing in both these cases, so that the prime condition of good composition was met.

Some teachers regard that condition as normal. They conceive children to be as well supplied with purposes, that require oral and written speech for their accomplishment, as with facts; and they regard the work of making children conscious of such purposes, and of formulating

these as subjects for compositions, as one of the leading elements of all good composition teaching.

Little sympathy with this conception is shown in the curriculum and syllabus for composition in the New York City elementary schools. The nearest approach to it is found in the early grades, where the desire is expressed that "the subject matter of the language lessons be interesting and instructive." But there is no reference either then or later to the need of a real purpose, on the part of the pupil, in the proposed conversations, story-telling, and writing expected from him beyond the improvement he will get in language. Even classic literature, of which much use is to be made, is considered valuable not so much as a source of live topics that need discussion but more as a source of models of style, for imitation. Composition, in the minds of the authors of the syllabus, aims at correctness of form, at clearness, accuracy, and sequence, in the presentation of thought. Classic models supply the best examples of these, and imitation secures practice; therefore, they must be the chief means of developing power in these respects. The need of motive for the expression of thought, in composition, is ignored.

This attitude helps to explain the course and syllabus in grammar. That subject really begins in the fourth grade, under the heading of composition, with a classification of four types of declarative sentences; in the beginning of the sixth grade it takes an independent place in the program, which it holds throughout the 6th, 7th, and 8th years. The absence of motive and the degree of its isolation from other subjects are indicated by two facts: First, in the prominence given to mere classifications, in the 6th year. For example, the following is a full statement of the work for Grade 6B:

"Grammar. The instruction should be limited to the subdivision, inflection, and syntax of nouns, pronouns, adjectives, adverbs, prepositions, and conjunctions. Only the most important subdivisions should be studied: of nouns, two classes, common and proper; of pronouns, four classes, personal, interrogative, relative, and adjective; of adjectives, two classes, descriptive and demonstrative; of adverbs, those expressing time, place, degree, and manner, and interrogative adverbs; and of conjunctions, coordinating and subordinating, copulative, and disjunctive. Rules of syntax should be studied in connection with words occurring in sentences.

"Phrases should be classified according to function, as noun, adjective, and adverbial—not according to form.

"Analysis and synthesis should be limited to simple sentences."

The other fact showing how isolated most of this work is expected to be is the statement in Grade 8A that: "In this grade emphasis should be placed upon the connection between composition and grammar." The idea seems to be that, after having classified the facts of our language in the preceding years, the pupils of the 8th year shall discover the motive

for such dull work, i. e., they shall see how these classifications are related to composition.

The value of this course in grammar must be seriously questioned for three reasons:

- a. It is no source of mental life to the average pupil; and, being made prominent in the crucial sixth year of school, tends to drive children out of school.
- b. Experience within the elementary schools has shown that the rules of grammar, learned apart from composition, literature, and conversation, have very little or no effect on the correct use of English.
- c. The time required for this kind of instruction must be mainly taken from composition and literature, and thus seriously weakens the appeal they make to children.

According to the time allotment of studies there are 375 minutes per week that can be given to English in the sixth year of school, aside from seventy-five minutes for penmanship. Out of this time the claim of spelling for approximately fifteen minutes per day, or seventy-five minutes per week, cannot be denied. Grammar as a separate subject cannot possibly get on with less than three periods per week of thirty minutes each, which makes ninety minutes. That leaves 210 minutes per week for literature and composition. If we assume that literature should receive at least thirty minutes per day, or 150 per week, that leaves sixty minutes, or two thirty-minute periods, per week, for composition. There are 205 minutes per week set aside for study and unassigned time. Out of this amount at least thirty minutes per day, or 150 minutes per week, are expected to be devoted to study, not recitation, leaving eleven minutes per day that can be used where most needed. Several other subjects as well as English are, of course, clamoring for more time; hence it cannot be expected that all, or even most, of this will go to English, as a rule. We see, therefore, that this grammar, while tending to discourage pupils, and while affecting their English only slightly at best, is also crowding out other work that is absolutely necessary.

### Attention to Relative Values

The emphasis, after the third grade, on model letters and model specimens of narration, description, and exposition helps to explain two striking omissions in the syllabus. The qualities frequently named, and set up as aims, are *clearness*, *accuracy*, and *sequence*. These certainly are desirable. But suppose that Lowell writes a model letter to Emerson thanking him for a book; and children, in imitation of this model, write to some friend likewise expressing thanks for such a present. The model letter cannot be fully followed. It must be modified, according to the persons concerned and the conditions. In other words, the *fitness* of



one's remarks, as well as their clearness, accuracy, and sequence, is a great factor in composition.

Again, if a pupil applies for a position, the success of his letter is likely to depend very much upon the reasons he can give for thinking that he is the most desirable candidate. One of the main tests of almost any kind of composition is found in the extent to which the data offered produce a vivid picture, a proof, a conviction. In other words, the *force* with which one presents ideas is another vital factor in composition. Clearness, accuracy, and sequence do not include these two; nor are they superior to them in importance. Why, then, is there no reference to either of them in the syllabus? The reason seems to be that want of appreciation of the need of any specific purpose in composition has caused these elements to be entirely overlooked. In addition, the absence of any particular aim in writing would deprive a writer of all means for judging the fitness and force of his statements anyway. Consequently, unless the authors of the syllabus had urged the importance of having a particular object in writing, any discussion of fitness and force as factors in success would have been useless.

The criticism here pertains not to what the syllabus includes but to what it omits.

Aside from this omission it is plain that much attention has been directed to the relative importance of various parts of composition work. In particular, the emphasis on much oral composition for its own sake and as preparation for written work is worthy of commendation.

Reference to relative values in the case of grammar is in place only when it is approached and treated as an art. For values are present only to the extent that relations to our interests are established. But grammar is not expected to be approached and treated here as an art. For example, as above quoted, the connection between composition and grammar is to receive emphasis in the eighth grade only. Grammar, then, is here presented as a science or, the outline being very brief, as a mere skeleton of a science. Who, in that case, can point out the most important part of a page or a chapter? Appreciation of values is to come later. Thus, as presented, this subject deliberately trains children to omit consideration of varying values at a time when the habit of weighing value is one of the most important ones for them to form.

### Attention to Organization

In its frequent reference to paragraphing and outlining, the syllabus gives desirable prominence to organization of ideas. But examination of the larger features of the plan reveals a peculiar defect in this respect.

One might suppose that classical selections treated in the periods set aside for literature would be drawn upon mainly, both for model examples for imitation and for subjects of discussion in composition. Proper correlation between composition and literature presupposes that. But

not so, in the main. While a general plan is proposed, as previously explained, for the appreciative reading of a masterpiece of literature as a part of literature, in composition another general plan is also proposed, even in the same year (the 7th) for a study of specimens of narration, description, exposition, and familiar letters selected from literature with the object of imitating them. There are supposed to be three readings in each case; and, while there is perhaps more attention to the author's plan and style in the latter case than in the former, one wonders why there should be so much duplication. This nearly complete duplication of work indicates that the authors of the syllabus intentionally avoid correlation among studies; and there are many other facts that suggest the same intention.

### Provision for Exercise of Initiative of Teachers and Pupils

In the field of composition the exercise of initiative involves expressing what one thinks and feels in one's own way. Many persons believe that one great object of composition is to help a person find out what he really thinks and feels, and to help him to express it in the way peculiar to him. With this object in mind, literary models should come late in the unfolding of thought on a particular topic, otherwise they are in danger of supplanting the pupil's own thoughts and style, and thus submerging him. Their function is not to supplant the self, but to offer aid *after* the self has found something of its own to stand upon. Then they are a very valuable source of suggestion, revealing desirable changes here and there in what is, at bottom, one's own. The conviction that good thought and good style are mainly to be gotten by imitating another is one of the worst calamities in a student's intellectual development. Imitation is a very valuable aid in securing good expression of thought, but it is a subordinate, not the chief, means; it is subordinate to self-expression.

In the curriculum and syllabus of New York City, however, imitation is the watchword; correct expression, rather than self-expression, is the aim; and positive suggestions for the preservation and development of originality are wanting.

With this conception of the worth of the pupil's individuality, it is not at all strange that the teacher's individuality seems to have been overlooked in important respects. For example, in Grade 5A the direction is given that "Only one kind of error should be corrected at each reading of a composition." That is nothing else than wooden. In Grade 7A the model specimens are to be studied in a certain way, as above referred to. Of course, these directions may be taken only as suggestions, although great numbers of teachers deny that they are commonly so interpreted by the principals and superintendents. But why should even suggestions be made whose influence is bound to be in the direction of uniformity, when adaptation to particular conditions, which

means diversity, is the standard of excellence? Should not many a classic model be read primarily to observe how vivid are the pictures the author produces? Should not many another be read mainly to study the peculiar force of particular words or phrases? There is no fixed way of treating these subjects; and to assume that there is, not only misleads immature teachers, but tends to tie the hands, or check the initiative, of those who are mature.

Further, the insistence on substantially the same curriculum in composition for all schools means infringement on the exercise of individuality by teachers and principals to a marked degree. For example, the list of prevailing errors in English restricts the activity of the teachers to those errors, whereas the actual errors vary to a limitless extent in schools representing different nationalities as well as home advantages; likewise, the amount of time to be devoted to oral and written expression of thought should vary extensively. The classroom teachers and principal of a given school are the only persons who possess the knowledge necessary to decide these matters, and their positive proposals are *required* if the curriculum is to make its fair contribution toward classroom efficiency. But the manner of presenting the present curriculum and syllabus at best *allows* freedom to act in these matters; it does not put a premium upon its exercise.

These, then, are prominent facts touching the curriculum and syllabus for composition and grammar:

They ignore the need of any particular purpose to be accomplished when one writes; and, in advocating grammar as a regular study, they emphasize their disregard for motive on the part of children.

Motive being thus disregarded, the basis for consideration of relative values is omitted completely, and very naturally some of the most important elements in composition—which are suggested only when motive is kept in mind—are ignored.

The importance of correlation between literature and composition is not recognized. Imitation is made so prominent that the individuality of children is endangered; while the directions given to teachers on method tend seriously to limit their freedom, and insistence upon substantially one curriculum for all schools prevents the adaptation of the instruction to individual conditions.

### c. Spelling

#### Motivation

The spelling of from 3,000 to 4,000 words is expected to be learned in the course of the eight years, and they are each year "selected from the pupils' vocabulary and from the lessons of the grade." This source provides far better for motive than do such lists as are usually found in text-books. But even this limitation is too broad when we realize

that the main need of spelling is found in the written expression of thought. This being the case, only those words should be studied that belong to one's "active vocabulary," and that are also *likely* to be used in written expression. In order to meet this condition, teachers should not only make out *grade* lists, drawn from the sources mentioned, but also class lists as well; and teachers and pupils together should arrange for "personal lists," including words new or particularly difficult for particular pupils.

The recommended order of procedure for the mastery of words is (1) Meaning through context; (2) observation of written form with naming of letters in order; (3) copying; (4) writing from dictation, perhaps preceded by oral spelling; (5) oral spelling. The insistence upon the meaning of each word at the start tends greatly to make the study concrete. The word study, too, extending through much of the course, helps to give the subject a real content of interest.

### Organization

The importance of association is not overlooked, as is shown above, in the combined use of the ear, eye, voice, and hand in the mastery of word forms. A small number of rules is taught; the grouping of letters into syllables, the observation of common phonic elements, and the grouping of words according to common stems, prefixes, suffixes, and as synonyms—all show attention to organization. But the most important grouping of all, i. e., in actual sentences full of interest, is partly overlooked. While words are *approached* in their setting, there is little reference to reviewing and testing them in actual sentences. Since spelling is mainly used in written work, the form of the word needs to be associated with the muscular movements of the hand, and it wants finally to be reproduced while the attention is largely directed to the content of what is written. For these reasons the real test of spelling is found in writing interesting sentences from dictation, and in spontaneous written expression. The endpoint in spelling practice, then, is not oral spelling, nor written spelling in lists, but written sentences, or paragraphs.

### Relative Values

The syllabus recommends the *teaching* of words rather than the mere testing of ability to spell them. That is a very desirable distinction. It also emphasizes the importance of attention to misspelled words. But, unfortunately, its suggestions about how to present new words are altogether too limited; beyond question they should be presented with the same care that topics in history or arithmetic might be presented, particularly in order to awaken thought and to avoid wrong first impressions.

Suggestions also about how to correct misspelled words are almost wanting, although that should constitute a prominent part of the study.

### Initiative

One important part of any plan for teaching spelling consists in provision for self-help on the part of the pupil. Word analysis is one part of any such provision, and that is made prominent here. The learning of some rules is a second means; and that is included. The use of the dictionary is a third means. But it is surprising that the use of the dictionary is first mentioned in Grade 6A, while very many schools elsewhere take up that task in Grade 4A. Why should it come so late in New York City? Also, the value of the proper enunciation of words as an aid to their spelling seems slighted throughout the course.

On the whole, the curriculum in spelling is reasonable in amount, and both its content and the suggestions in the syllabus about method free it from excessive formality—which is a decided merit.

### d. Music

#### Provision for Motive

The course of study in music in the elementary schools calls for rote singing from Grade 1 through Grade 4A. This plan gives an opportunity to supply the children with musical experiences that they would be unable to have if they were dependent on what they could read.

But no guidance is given by example, or by titles, of the kinds of songs, or of the particular songs, to be used. Considering the fact that music, like language, is a product of our social life, and that the child's early musical experience establishes his comprehension of and taste for music in the same way as his early study of literature establishes a comprehension of and taste for literature, it would seem to be of the highest importance that the musical selections which the child learns by rote should be not only of a character to please him at the time, but also of classic quality. In fact, it is the proper awakening of the pupil's feeling for *good* music in these early grades that constitutes the most fundamental part of his musical education. Music, like language, interprets the social and physical world about us. In the choice of songs in relation to seasons, festivals, social events, and occupations, there is supplied a strong motive for the use of the songs. But so long as no suggestive lists of songs are made, and principles of selection are wanting, there is serious lack of guidance.

This is all the more evident when one reflects that the difference in the ages of the pupils, even between the first and fourth grades, requires much variety in the choice of materials; and, while no list should be any more universally accepted than is a list suggesting what would be

read for literary purposes in the readers that are used, yet one of the main functions of those who plan language courses and readers is the selection of the materials.

It might be said that this task is accomplished in the music readers. But three or four years of more or less rote work in music precede any extensive reading ability in that subject, so that books could be of little use during these early years. Also music, even more than language, depends for its effectiveness upon its character and the style in which it is rendered. Hence, the choice of materials should have been indicated with more than the care employed in the choice of literary selections. There are classic songs for children like some of the Mother Goose melodies, as well as those of more serious types like Stevenson's verses put to music. Considering the flood of weak music that is written for children, as well as the number of bad adaptations, guidance in the choice of material is imperative.

Reference to the importance of the style in which the rote song work is done brings up a further reason for care in selection. Owing to the important fact that the child's quality of voice, his inflection and articulation tend to act automatically in response to what he clearly feels, the rote song that really expresses his interest becomes one of the most important means for developing good tone and expressive rendering. To be effective, as in the case of language, the thought expressed must appeal to him. Yet neither the course of study nor the syllabus that accompanies it has anything to say on this score more than that the tone must be sweet and the songs must be well rendered.

The course of study follows the same plan with reference to the reading material for the later years as it does with reference to the rote song work, i. e., it makes no effort to define or suggest good materials. That the readers contain many valuable selections there is no doubt; but there is no doubt either but that they contain many that are poor. Some guidance was necessary here, also.

In omitting extensive and helpful suggestions, therefore, as to desirable materials, the curriculum and syllabus fail, most seriously, to provide properly for motive.

### Consideration of Relative Values

In considering relative values, we are chiefly interested here, as in early reading of literature, in the extent to which the formal side of the work is subordinated to the thought and feeling.

Turning to the use of the rote song for purposes of teaching the tonal relationships necessary for sight reading we find that, while this idea is suggested in the syllabus, no provisions for carrying it out are made; hence this live approach to the technical work is lost sight of in the classroom in a merely formal presentation. In the first grade, it is true, the suggestion is made that the scale should be learned as a song;

but this rote song basis is practically omitted, and the entire attention is devoted to the practice of intervals, dictated by number. As such independent intervals do not form musical movement any more than single letters, or even words, form literary thought, the effect of such interval practice resembles more the earlier methods utilized in reading when the attention of the pupils was directed first to the letters, then to the words, and finally to the combination of words, in a phrase. It is true that the organization of the work in music, along the line which was followed by teachers of reading years ago, is carried out with extreme care and thought. But since the principle upon which such music teaching is based has not only long since been discarded; and, also, since the success of the new method in music has been well established, it is unfortunate that the syllabus does not indicate by its scheme of study the appreciation of this new approach to the very difficult subject of sight reading of music.

Again, granting the great importance of drill in sight reading, both in reference to the practical result of being able to read music and to the musical intelligence that can be developed by such work—thus enlarging the sphere of possible musical appreciation—it must be borne in mind that a very large proportion of the pupils will make very little use of their music-reading ability. What is of prime importance throughout the elementary school, therefore, is that good standards of taste be established both for the music and its effective rendering. Consequently the adequate rendering of good selections, not only by the class but individually, should be the end toward which pupils and teachers should strive, and in this accomplishment standards of judgment both with reference to the composition and its rendering should be developed that would be of the highest practical value in improving and strengthening the taste of the future citizen for good music. Unfortunately in the course of study the emphasis is placed upon book work increasingly through the grades, with reference to the ability to *read at sight*. In fact, one might say that this is practically the only standard held up.

The music as planned, therefore, is peculiarly technical. It allows the formal side to be uppermost in the earlier years—as in the old style of reading—and it makes technical skill the final aim. The ideals that the pupil gets are in the direction of sight-reading skill, and this unfortunately with little reference to beauty of tone or expression.

### Provision for Individuality

Work in sight singing from the book is commenced in Grade 3B. It is natural that in this and the following two years there should be a pretty strong emphasis on the technical side of music reading. Such work requires to a peculiar degree the ability to translate arbitrary symbols presented to the eye into musical ideas. The ability to look ahead and coördinate what is coming, so as to know how to render the passage,

is similar to that of intelligent word reading, except that, in music, it is much more complicated. To make this rapid coördination possible, intensive drill in the comprehension of what the staff calls for in its sound equivalent and tonal relationships is necessary.

While accuracy and speed are essentials in such drill, the most important consideration is that the individual pupil should do the work. It is not merely class knowledge and skill that are wanted, but a knowledge and skill of the individual. As a help to the establishment of this individual responsibility, it was highly important that the syllabi should show clearly the order in which the various tasks should be undertaken—that, indeed, they should establish a *standard sequence*—so that ordinarily no pupil should be allowed to proceed to a given topic before reasonably mastering those preceding it. But the course of study and its accompanying syllabi, while giving minute directions as to the particular keys, intervals, and manner of doing, set nowhere such a standard for any grade. Accordingly, there is a tendency to hold pupils for no particular results. Those children that need the greatest care and attention are carried along by the more musical ones, and they pass on from grade to grade without even being conscious of what they don't know.

The peculiar importance of this point is seen in the fact that, in music, more than in any other study, the work is done in concert. The rhythmic nature of music encourages that method. A course of study, while not demanding identical work from all pupils, should demand that a few of the fundamental facts in their logical sequence should be known by every child who is intelligent enough to do the work of the grade. It should not be possible for nearly half of a class entering a girls' high school to be unable to give the pitch names of the staff, as was recently the case. It is one thing to respond to dictation work, or to sing a passage with the class as a whole, and a very different one to do the same thing individually.

It was the duty of the syllabus to have checked the tendency toward concert work alone, not only by suggesting a certain sequence that each pupil should necessarily follow, but also by directly emphasizing the importance of individual singing. In omitting these precautions they have manifested peculiar disregard of individuality.

### Organization

This demand for individual accomplishment on the part of the pupils could be greatly stimulated if, in the organization of the work, definite requirements could be made of all those who plan to teach. A very large number of the girls who continue their study beyond the eighth grade expect to teach eventually. To know the requirements in music would influence their work even down to the seventh and eighth grades, and it would materially help the work in the high and normal schools. Unfortunately, the music in many of the high schools, owing to the



difficulty of arranging programs, obliges students of different years to sing in the same section or class. This makes all orderly work impossible, and, coupled with the lack of any definite requirements either as to application or scholarship, such as are expected in other studies, tends to reduce the singing to a mere entertainment exercise. This attitude in the high schools is reflected into the grades.

The dignity of music demands that a more definite organization of the whole field be established, and such organization should be most clearly revealed in the curriculum and syllabi.

To sum up, it is suggested, first, that both the motive for singing and the style of rendering songs would be greatly helped if classic selections were listed appropriate both for the grades and the schools as a whole.

Second, that proper attention to relative values requires that technical knowledge and skill be more subordinated to school singing and musical taste.

Third, that the individuality of pupils be more fully provided for by much more attention to individual attainment in contrast with concert work, or class attainment.

Fourth, that the subject matter be better organized so that there may be far more definite requirements for each grade, both as to application and scholarship.

### e. Nature Study and Elementary Science

#### Provision for Motive

The syllabi for nature study of Grades 1 to 5, and for the elementary science of Grades 7 and 8, are dominated by the scientific point of view, which properly prevails in the later study of science in college. The apparent motive is to teach the facts of systematic science, and there is no provision for selection and organization of materials in line with the widely accepted view that the motive of nature study should be relation of natural things to human life.

The first illustration in support of this criticism is taken from the syllabus for nature study (page 15):

"It should be clearly understood that no class is expected to study all of the topics in nature study that are suggested in the syllabus. *The pupils should be taught to recognize and to name all of the subjects under each caption*, but only a few topics should be selected for *systematic observation and study*. When other material suitable for the work is more accessible, it may be substituted for that mentioned in the syllabus."

Note the emphasis upon "learning names" and "systematic observation." But there is no suggestion of relating the study to human life, or even of the dynamic point of view, which requires interpretation of

structure in terms of function. This clearly indicates the viewpoint of science rather than of nature study.

The motive of organized science is as prominent in the syllabus for elementary science as it is in college courses. In fact, the syllabus for elementary science is in outline a close imitation of a college laboratory course in physics. In support of this statement, a few quotations will suffice:

"Generalize results obtained in (experiments) 16, 18, and 19 in form of an equation. Give problems applying this equation. By diagram show that distances traversed by force and load are proportional to their lever arms, and therefore force multiplied by distance-force-moves equals load multiplied by distance-load-moves." (Page 33.)

("The teacher should here develop very simply the ideas of molecular structure of matter and of heat as a form of molecular motion.") (Page 42.)

("Discuss the three modes of propagation of heat illustrated by experiments 108 to 119.") (Page 45.)

Such a course is so entirely out of line with elementary education that a complete reorganization is desirable. And the course for Grades 7 and 8 should not be reorganized as elementary physics, but as advanced nature study and introduction to *general science*.

That is, the subject matter should be selected with primary reference to the pupils' interest rather than from the viewpoint of pure science.

### Attention to Relative Values

The scientific and encyclopædic points of view being so dominant, relative values have necessarily received little consideration.

The very important points included under "Natural Phenomena" are omitted from the A divisions of Grades 1 to 4.

Probably no other topics are so usable and useful in all schools as are these inorganic nature-study lessons. It would seem that the same broad subjects in this field should be included in the work for the two divisions of each grade, and that optional topics might be suggested for study in the more advanced division.

The present "elementary science," limited to physics, excludes many elementary ideas of chemistry that are more important for grammar schools than are many of the topics of physics outlined here. In order to find time for the chemical experiments needed, the present outline of physics, subdivided into gravity, mechanical powers, mechanics of liquids and gases, magnetism of electricity, sound, and heat, might well give way to an outline of chemico-physical nature study based on daily life and interests.

Further suggestions in regard to provision for relative values follow in discussion of organization.

### Organization

There is need of some attempt at organization of the course of nature study, for most of the topics now stand as isolated as did those of the former object lessons. In the previous discussion of motivation and relative values also it was suggested that the entire course of elementary science should be reorganized from the nature-study point of view in place of the present imitation of systematic science.

Trees, birds, insects, and many other assigned topics need not be studied entirely as isolated specimens; but the studies should be grouped together so as to bring out the human interest in some larger problems, such as conservation of forests and bird life, influence of insects on agriculture, the usefulness of animals and plants to man, the development of individual animals and plants. Such organization is largely applicable to grades above the third. A limited number of trees and birds may profitably be considered in each primary year, but in grades above the first three there might well be intensive series of lessons which bring together the main facts about questions of general interest.

A prominent part of the nature study ("elementary science") of the 7th and 8th grades should center around hygiene, which offers splendid opportunities for introducing the most useful ideas of elementary chemistry and physics. Moreover, the inclusion of hygiene (with the necessary physiology) in the "elementary science" will place that important study of the human body on a laboratory or observational basis, which it cannot now have in its present relation to physical training. Probably the weakest point in the entire course of study for nature study and elementary science in the New York schools is the complete separation of hygiene from the observational studies of natural things which the best teachers of the subject select for illustration. For the sake of better teaching both of hygiene and of the introduction to science ("elementary science") the two subjects should be united in an organized course.

The present syllabus of nature study offers little opportunity and less encouragement for correlation with other subjects.

Much of the inorganic nature study, including the weather studies of Grades 1 to 5, should be arranged as preliminary to, or correlated with, geography. Still other inorganic topics, such as air, water, and heat, need to be related to hygiene.

In the higher grades, also, the relations of this field to the physical aspects of geography, to household arts and industrial art, should be clearly stated in the syllabus.

On the other hand, the recommendation that "stories, fables, songs, and other literature pertaining to objects studied should be read" (Syllabus, page 14) leads too easily, in practice, to the substitution of reading for observation, which is fundamental in nature study. The nature-study time should hardly be used for reading "stories, fables, and songs."

These are important for correlated English lessons; but have no proper place in nature study. The only legitimate reading for the nature-study period is that which helps with the observations or gives supplementary facts that are scientific and in harmony with the most approved aims of nature study. All other reading, such as stories and fables, should be judged and selected from the viewpoint of English, and read in the periods assigned for that subject.

In brief, every study must have its own purposes, and all subject matter finding a place in a study should be chosen primarily with reference to the purposes of that subject.

The omission of nature study from the sixth year makes a break in a continuity which ought to extend from Grade 1 to Grade 8, inclusive. This is not serious with the present syllabus, for, as indicated above, there are at present no obvious attempt at continuity and little correlation; but, in a revised syllabus, which attempts continuity from Grade 1 to Grade 8, there should be regular nature study planned for Grade 6.

### Provision for Exercise of Initiative

So far as the teacher is concerned, self-expression is very much circumscribed by (1) the advised formula method, and (2) by the prescribed materials for study.

(1) The method for teaching nature study prescribed at the bottom of page 15 in the syllabus (quoted in the foregoing under motivation) is an exceedingly limited formula, tending not only to insure that all topics will be treated alike, but also that they will be treated very superficially. The formula for teaching elementary science has the same tendencies (page 29).

(2) The selection of materials for nature study in Grades 1 to 5 appears to be based almost entirely upon the kind of nature study adapted to suburban or rural regions; and there has been almost no planning for the city schools. It is generally admitted that even in the most congested city districts there should be some nature study based on materials imported from rural regions, and hence not drawn from the environment of the school children; but the present syllabus is too exclusively based on such foreign materials.

However, the widely different environmental conditions in Greater New York make a uniform syllabus of nature study for all schools especially undesirable and unsatisfactory.

Nature study in its best interpretation deals with nature in relation to daily life, and this obviously demands wide differentiation between nature study for city and country schools, and also for schools in different parts of the city itself.

More than that, the ability of teachers to give instruction in nature study varies more, even, than their ability to teach music. A single course of study in nature for a great city, therefore, based on the as-

sumption that all schools can have much the same materials for study, and that all teachers can teach it, ignores the plainest facts; and, if required, it must lead to results that are at least questionable. If a classroom teacher were to show as little regard for individual conditions as this curriculum shows, she would be condemned outright as lacking the first elements of a real teacher.

The part of any curriculum in nature study that can be properly required of all the schools is very small indeed, consisting of such topics as opening of buds, weather studies, common vegetables and fruits, germination of seeds, and a few very common wild flowers. Beyond that, a series of well-organized topics might be only suggested, from among which teachers might select according to availability of materials, environment of the school, possible correlations, ability of the teacher, and interest of pupils.

And even then not very much is likely to be accomplished in many of the schools until ample provision is made for supplying schools with desired materials, just as has long been customary in connection with the high schools.

As the syllabus now stands, no teacher deserves censure for omitting all nature-study observations, for there is little more justice in expecting teachers to get the necessary materials than there would be in expecting them to provide pupils with writing materials and books. The many teachers who, working with the present syllabus, are providing the materials and conducting creditable lessons, deserve the highest commendation for giving to the schools what, in all justice, should not be expected of them.

Considering the fact that nature study is a new subject to most teachers, and that few normal schools give adequate preparation for its teaching, the syllabus should by all means be supplemented with some approved lesson-plans on typical topics, notes on materials, and specific references to books, which should be in school libraries.

In brief, we find this course in nature study and elementary science ignoring interest on the part of young people, disregarding relative values among facts, merely enumerating topics rather than offering an organized outline—particularly for the first five grades—and paying the minimum attention to individual conditions.

#### **f. Arithmetic**

##### **Organization of Subject Matter**

The organization of the course of study is relentlessly logical. Thus the addition tables of 1's and 2's are presented in the 1A grade; the tables of 3's and 4's in the 1B grade; and the remaining tables of the 5's, 6's, 7's, 8's, and 9's are completed in the 2A grade. The multiplication tables through  $5 \times 9$  are taught in the 2B grade, and the remaining tables through  $9 \times 9$  are taught in the 3A grade.

There is rapid drill on the tables already learned in the 3B grade, and in the 4A grade the learning of tables is continued through  $12 \times 12$ . The same careful grading is planned in the study of "bills" in each grade from 4B to 6B. The syllabus contains the following statement for the 4B and 5A grades: "Bills made out and receipted; the model should have date, name, address, and business of the maker; name and address of the debtor." In the 5B grade the terms debtor and creditor are to be properly used and defined; and in the next two grades bills are to be paid by checks. The same tendency toward logical arrangement is shown in the teaching of dry measure. Pints are taught in the 1B grade, quarts and pecks in the 2A grade, bushels in the 3A grade, and contents of bins in bushels in the 6A grade. The cases here given are representative.

Such logical organization has two evident advantages. In the first place, the grading is so even that the work assigned to each of the several grades is about equally difficult for the children concerned. In the second place, teachers are not in doubt regarding what the pupils have had in the previous grades, or what is expected in their own. It is very convenient for superintendents and principals also when they desire to obtain a quick estimate of the work of the teacher.

But this arrangement of subject matter is just the one that educators have been trying to escape during the last twenty years. Its defect is that, while intended for children, it is planned entirely from the viewpoint of the adult. That is, it is coldly logical, where it should be psychological, or adapted to child nature. Consider the addition tables, for instance. According to the course, the pupil is expected to spend a few weeks on adding by 1's and 2's before proceeding to 3's. But if he has any need at all for number his requirements are not limited to adding by 1 or 2. The sum of 4 and 3 is likely to be required as often as the sum of 8 and 1, and the former combination is no more difficult to learn than the latter.

Likewise, the facts connected with dry measure are not best gained by learning first the pint, then the quart and peck, and last of all the bushel, with a pause of a few months after each effort.

That young children use number extensively outside of school cannot be doubted. But their approach to the subject is through scoring in such games as dominoes, bean bag, and shuffleboard; through measuring, in connection with the making of articles out of paper, cardboard, string, and wood; through buying food in small quantities, etc.

This being true, if a division is to be made in the learning of the forty-five combinations, the basis of the division should be that of the magnitude of the sum or product, as suggested by observing how children of a given age actually use number.

Any one who has observed little children, with toothpicks in hand for illustrative material, laboriously going up and down the tables, saying 5 less 1 equals 4; 5 less 2 equals 3; 5 less 3 equals 2; 5 less 4 equals 1 must have felt sorry for the little tots. That is too systematic for any person but a philosopher.

It is the same old question of "rigid sequence" that is slowly being rooted out of the industrial arts and the kindergarten. It used to dominate in the readers, but no longer. Such sequence is resorted to only when one has forgotten one's childhood and lacks the higher viewpoints of modern education.

### Attention to Relative Values

The planning of a course of study is a severe test of one's conception of the relative worth of different facts. As long as the disciplinary conception of education endured, the selection of the various topics in arithmetic depended very largely on their fitness as means for training the mind in such virtues as love for the truth, accuracy, perseverance, and the like. The science of number was then more emphasized than the art of computation, and almost any kind of subject matter was admitted.

The results that were obtained by this method were not satisfactory, and there was an insistent demand for a mathematical curriculum that was more closely connected with the affairs of life. In many quarters the schools attempted to meet the difficulty by organizing a course of study in arithmetic which was utilitarian in the narrow sense that it attempted to make the pupil efficient in the counting room or store exclusively. Emphasis was placed on the art of computation, on business forms, and short methods. That also failed to satisfy.

At present there is a demand that is more important than either of these two. Society recognizes that not every pupil in the school is to become a clerk or an artisan, but that every one is and will continue to be a member of a social organization in which savings banks; fire, life, and accident insurance; and corporations of various sorts, are important factors. The success and happiness of an individual will depend much on an understanding and appreciation of the various institutions with which he must deal. This conception of the needs of the individual has brought about a demand for a practical treatment of arithmetic in the elementary school. This standard for the selection of subjects emphasizes the applicability of what is to be taught to the actual affairs of life, a provision that will add life to the subject, and thus give a special guarantee of the mastery of its fundamentals.<sup>1</sup>

Partial payments, highest common divisor, cube root, compound proportion, and like subjects which are now taught in the city, have no place in such a course. Other subjects, such as mensuration, deserve treatment only to the extent to which their limited utility entitles them. Most important is the inclusion of such subjects as come in close touch with the affairs of life. The work of a certain sixth-grade teacher in a private school in New York may be mentioned as indicative of this broader conception of arithmetic. During the visit of the fleet of war vessels the pupils of this grade wrote a letter of inquiry to the officer of one vessel concerning the amount of food required by his crew. This

<sup>1</sup> Addition, subtraction, multiplication, and division of whole numbers, simple fractions, both common and decimal, percentage, and its simplest applications.

information was furnished and became the basis of some very instructive lessons on the cost of food, as well as material for effective drill in computation. An article in a magazine setting forth the relative expense of delivering goods by automobile and by teams gave the opportunity to teach intelligently the meaning of percentage.

The New York course of study gives no indication of appreciation of values of this sort. The various topics to be studied in each grade are printed in order without suggestion along this line. The syllabus does indicate values in certain cases; i. e., special emphasis is laid upon certain work in each grade; but that is an emphasis that requires only special drill.

There is, however, a paragraph in the introductory note of the syllabus that is of interest in this connection. It runs as follows:

"Numerical relations may be found wherever the mind seeks them; hence problems may be derived and should be derived from the life of the home, the school, the farm, the laboratory, the factory, as well as from the shop and bank. The limitation of problems to transactions in dollars and cents tends to give practical arithmetic a purely formal and disciplinary character; on the other hand, excursions into other fields of human activity, while sacrificing nothing of the disciplinary value of the subject, give it a varied and interesting content. Problems may be classified as simple, or those involving only one operation; and as complex, or those involving more than one operation."

This sounds well; but its value depends upon how seriously it is followed up later. But it is not followed up; indeed, it is to some extent even opposed.

In the 6A grade the statement for problems is "practical problems involving denominate numbers applied to every-day business usage." The measurements for this grade, however, include the following:

"Contents of bins in bushels; memorizing 2,150.4 cu. in. in one bushel; contents in gallons; memorizing 231 cu. in., one gallon. Reduction of contents in bushels and gallons to cubic measure. Surfaces of rectangular solids. Comparison of the units of weight used by the jeweler with those used by the grocer; memorizing 5,760 gr., one pound Troy; 7,000 gr., one pound avoirdupois."

It would be difficult to think of any subject of less practical importance, when applied to every-day business usage, than the comparison of Troy and avoirdupois weights; and the utility of each of the other measurements named above is at least open to question.

The syllabus calls for the consideration of the weight of potatoes, wheat, and oats without memorizing; but the weight of a gallon of water is to be memorized. As a consumer the pupil will probably have occasion to buy potatoes, and possibly wheat and oats; but the probability of his using the knowledge that 1 cubic foot of water weighs 62.5 pounds is remote. Furthermore, although throughout the syllabus much is said regarding business application of number facts, not until the 8A



grade is any attention directed to those institutions that are vital factors in the determination of the values of arithmetical facts for the elementary school. In this grade business forms and usages are studied, and the function of savings banks, banks of deposit, and other corporations is briefly explained. If the syllabus is serious in the desire to connect arithmetic with life, why should it not have led the way by giving examples of such connection in each grade? The explanation seems to be that, after all, it is the science of arithmetic that the authors have in mind. Arithmetic might be used to reveal the quantitative side of the life about us, in industry, commerce, business, and city government, in particular, just as fine art reveals the æsthetic side, and literature the moral side. But the science of arithmetic may be as unrelated to practical affairs as the science of grammar to daily speech; and the syllabus tends to favor this isolation.

Further work of the 8th year, besides the business forms just mentioned, is the mensuration of plane and solid figures, such as the areas of parallelograms, trapezoids, and regular polygons; the convex surfaces of pyramids, cones, and spheres; and the volumes of pyramids and cones. Other figures, such as the rectangle, triangle, and circle, are also measured. Certainly the mensuration of such forms as were last mentioned is far more important than like operations with such unusual figures as those given before, yet there is nothing in the course or syllabus to indicate that any difference in values is recognized. One statement in particular regarding the problems for this grade gives a clew to the conception of the relative values of the business forms and the mensuration. It says, "problems should involve the indirect relations growing out of the rules for mensuration, as: If the area of a circle is 314.16 square inches, what is the radius? Problems giving rise to simple equations involving two unknown quantities." Such topics as expenses and support of the city government and the cost of furnishing a house are not once mentioned. If relative values had received careful attention, not only would these last topics have been included, but many other topics now included would probably have been eliminated. For example, the least common multiple and greatest common divisor as definite and independent topics (now required in 5A); compound and complex fractions (in 5B); problems in denominate numbers involving three and more successive units (6A); the whole of numerous tables in denominate numbers, where only some of the facts are really wanted; the metric system (in 7A); and true discount (in 7B).

#### Provision for Motive

The foregoing discussion of organization and values leads to a consideration of motivation. The modern conception of the importance of interest as a factor in the learning process is leading the school to recognize the pupil's right to view matters in the light of his own expe-

riences. To be of value, subject matter must be sufficiently near to the child's life to present problems which he feels it is necessary to solve. Thus it happens that plays and games and household accounts have a legitimate place in the arithmetic work.

The syllabus provides in a very mild way for motivation by having the children learn to count by using objects, sounds, and motions; by reading time by the clock; by making change; and by stating that the *problems should be practical*. But on the whole it makes little provision for the pupils' motivation. The devotion to rigid sequence, as discussed under organization, indicates this.

Much that was said concerning values would apply with equal force here. Although pupils are to learn a considerable number of business fractions, and their percentage equivalents, there is no indication that these facts are approached in any concrete setting, or grow out of any need felt by the pupils.

There are two signs of want of motive in arithmetic: First, an excessive amount of drill; second, inability to solve real problems. A very large part of the teaching in this subject consists of drill, because of the want of fresh ways of approaching and reviewing the facts. And it is not at all uncommon to find classes that are able to do remarkably rapid and accurate work with such subjects as cancellation and the finding of the highest common divisor, when they are unable to do simple problems that involve actual situations. Such classes have been drilled until they know just what is expected of them in the more or less formal processes, but real problems are so remote from their school experience that the terms employed tend to confuse rather than make concrete. The curriculum and syllabus exert no influence in opposition to these tendencies.

Mention has been made of the constructive and inventional exercises found in the 7A and 7B grades. In the introductory note three claims are made for this work: It has educational value, prepares for the work of mensuration in the next grade, and gives a knowledge of the constructive principles employed in mechanical drawing and construction, and in shop work. Even if the first claim be granted, it provides no motive for the pupil to do this work. There is lacking even the stimulus that is operative in formal geometry, where the consciousness of finding an invincible proof is a source of satisfaction.

Of the problems of mensuration in the next grade, very few—as already shown—have any practical value in every-day life; and even these are more effectively and economically learned by memorizing when the need arises than by logical reasoning when no motive exists.

Finally,\* the claim that this work prepares for mechanical drawing and shop work raises the question as to whether this type of work belongs to arithmetic or drawing. The fact that it does find a place in the drawing seems to show that there is where it belongs. But if the motive is found in its relation to shop work, and the latter is taken only by the

boys, then why should it be required of both boys and girls? The fact is, it seems as if little value were really attached to these constructive and inventional exercises. They, together with much of the mensuration, impress the critic as padding between the sixth year and the eighth so as to have a "full course."

### Provision for Exercise of Initiative

Under the heading of "requirements" the introductory note states that "both the course of study and the syllabus provide for the minimum requirements. Pupils capable of more rapid advancement should not be confined to the limits set in the syllabus for the grade."

The purpose of a minimum course of study is usually understood to be to make requirements so small that both teachers and the brighter pupils will have opportunity to follow their own bent to some extent. But the course is so full that teachers generally believe that nothing more could be undertaken in the time allotted to the subject.

The syllabus, at any rate, is almost destitute of suggestions as to **what** might be used to supplement the required work. The expressions "etc.," "exercise similar to," and "for example" each occur once. Moreover, the possibility of initiative depends much on an understanding of the aims and purposes of the activity involved. As might be expected from its failure to recognize values, the syllabus does not state aims or purposes except as they are implied in the claims for the constructive and inventional exercises quoted, and in the statement that "special importance is attached to the thorough mastery of the combinations in addition, subtraction, multiplication, and division." Intelligent initiative on the part of teacher or principal under these conditions is extremely difficult.

Why should not the syllabus have offered numerous suggestions, if this was really to be a minimum course?

The most important factor in preventing initiative in this study is the widespread belief that teachers are to be judged, and their standing determined, by the showing their pupils make when tested in conformity with this course and syllabus. In one school the head of department has distributed mimeographed copies of problems that are to be done each month, and a careful analysis shows that they are all selected in accordance with the statements found in the syllabus.

The special work of the 5A grade is common fractions. This work is described as follows: "*Oral.* Special attention to business fractions, e. g., cost of articles at  $12\frac{1}{2}$ c. ( $\frac{1}{8}$ ), at  $16\frac{2}{3}$ c. (1-6), at  $33\frac{1}{3}$ c. (1-3), at  $\$1.12\frac{1}{2}$ , at  $\$1.16\frac{2}{3}$ , at  $\$1.33\frac{1}{3}$ . Written. Easy fractions. Least common multiple developed and applied in addition and subtraction of common fractions; greatest common divisor developed and applied in reduction of fractions to lowest terms; cancellation developed and applied in the multiplication of fractions. Definitions reviewed."

With such an abstract outline as a guide, with the knowledge that the

instruction will be rated on the speed and accuracy in exactly these topics, and with no suggestions as to broad purposes within whose range there would be some possibility of choice, what prospect is there here of any initiative on the part of either teachers or pupils?

One thing that might have been done is suggested by the course of study in another city, which contains this statement: "The chief difficulty that the pupils have in acquiring the fractional processes is to interpret clearly the unfamiliar and so perplexing forms and terms used. The problem of the teacher, therefore, is to enable pupils to interpret these conventional symbols in terms of their own experience."

Here the teacher is informed that there is something else to watch besides mere processes, namely, the many ways in which these processes are called for and used in life. That suggests the desirability of introducing the pupils into actual examples of this sort, such as the pupil might himself meet, in which undertaking a large degree of originality may be shown by the teacher, and by the pupil as well.

The work of the 8B grade is a general review of the mathematical course. The syllabus states that "the nature of the review is left in the greatest measure possible to the good judgment of the principals and teachers. Generally it should be planned with a view to correcting existing defects in the mathematical work of the pupils, and should include daily practice in the four fundamental operations with integers, common fractions, and decimals." This might seem to invite initiative, at last; but the fact is that many teachers assert this to be as dead as any part of the whole course, because a very definite test as to skill and accuracy is known to await them at the end of the term, so that the work, both in kind and quantity, is prescribed for them in full. Here, again, the syllabus might have protected itself against such a charge by requiring that the unity of certain parts of the course, as revealed by underlying principles, be established, and by suggesting other new and broad viewpoints. But that is not attempted.

These, then, in brief, are the characteristics of the course and syllabus: They stand for a rigid sequence of subject matter, which ignores the grouping customary in both child and adult life; they contain many things of doubtful value—in fact, so many that, if they were all omitted, the course in arithmetic might probably be reduced from eight to six years without serious loss; they make practically no provision for approaching number through its relation to practical affairs, although they suggest that it be so approached. And, by their omission of reference to workable aims and principles, as well as by the abundance of requirements, they make it extremely difficult for teachers or pupils to exercise initiative in this field.

#### **g. Drawing, Construction Work, Cooking, and Sewing**

The program includes:

Drawing—through the eight years for both boys and girls. Con-

struction work—for boys and girls undifferentiated through the first two and one-half years.

Boys—Cord and raffia work through the third year, and shop work through the seventh and eighth grades. All hand work for boys during the fourth, fifth, and sixth years is included in the drawing.

Sewing—for girls from the second half of the third year through the sixth year. In schools not having cooking advanced sewing is given in grades 7 and 8.

Cooking—for girls in grades 7 and 8 in most schools.

### Provision for Organization of Subject Matter

In brief, the organization of these several subjects may be summarized as follows:

#### Drawing

The work is almost wholly of two types: representative and mechanical. The drawing of commonplace objects, singly and in groups, together with quite a bit of copying as a method of developing technique, and the representation of furniture and interiors for perspective, makes up the chief work in *representative* drawing. In grades 7 and 8 there is added a great deal of work in constructing geometric forms, and in making working drawings for hypothetical projects in wood or metal. There is no direct relationship between drawings made and projects actually constructed in a shop or elsewhere. The sequence of work is determined upon a purely technical basis.

#### Constructive and Shop Work

The constructive work of the first two and a half years is intended to "develop in the young child the power of motor control and coordination." Subject matter is limited almost wholly to the ideas involved in the simple processes of knotting, looping, weaving, and stitching in cord and raffia. A very small quantity of work is done in paper or cardboard. Very simple and meager opportunity is given for choices in color and design.

In shop work, grades 7 and 8, the work is planned on the basis of a technical sequence in construction, chiefly of joints. Projects are chosen which provide for a good sequence in the use of the common wood-working tools. Technical efficiency is the chief endpoint. In the new course, just developing, groups of models for each particular element of technique are provided, from which teachers may select as best fits their own needs.

#### Sewing

In the sewing the sequence is definitely technical. The work throughout is arranged in two parts—technique first developed through specific

"exercises," or practice pieces; and then application to some usable article. The "application" may not be made until a certain degree of skill has been attained in the "exercise." The chief endpoint seems to be efficiency in sewing as a process.

### Cooking

In addition to a sequence of work providing for a simple knowledge of the cooking of numerous types of food, and of food principles, the course covers simpler phases of housekeeping, laundering, care of the dining-room, table service, nursing, dietaries, home sanitation, and marketing. In all of these topics there is a pretty well-organized body of thought provided in connection with the practical work. "Thorough housekeeping and the making of a home" are offered as the endpoints toward which details are to contribute.

In all phases of work in this field, organization of material is on the basis of technical sequence. Technique is prominent over everything else, and the technical sequences, as such, are good.

Thought material related to tasks that might be expected to make a strong appeal to children is all relegated to *Incidental* Instruction, save in cooking, where it is specifically provided for. The relationship of principles to practice, also, is markedly absent save in cooking.

The several subjects are so completely isolated that they do not correlate with other subjects, or even with each other, where this would be especially desirable, as in drawing and shop work, or art work and textiles. There are occasional exceptions in the teaching, but these are not provided for specifically by the curriculum.

The curriculum is uniform for all districts—alike for those populated by the professional and commercial workers, and those populated by the hand workers in distinctly industrial neighborhoods. This of itself emphasizes the disciplinary aim and the technical sequence.

The organization, therefore, in all these subjects except cooking is planned almost solely on a mechanical basis, and correlation is omitted.

### Provision for Motivation

In drawing, sewing, cooking, and in all but the last half of the last year in shop work, the projects are rather definitely prescribed by the course of study, or by the officials of the department in charge. In shop work during the last half year any models are permitted which incorporate the constructive principles prescribed. Under the plan of groups of models from which to choose, now under development, more flexibility in shop work will be provided for the teacher; but this will not much affect the pupils.

In so far as the curriculum is concerned, motivation of the pupil is not considered as a problem at all, save as incidentally provided in the fact that children like activity and like to work with materials. The

problems undertaken are not their problems, but are prescribed for them. As the products made are theirs, they may exercise choice in the use to which they put them; but this is practically the limit to which motivation may apply. In drawing, working drawings are prescribed for part of the work in grades 7 and 8, but the drawings made are not of projects to be used in shops. "I would rather my boys had had no drawing at all than that which they now get in working drawings. It is a hindrance rather than a help. They have so many wrong notions about it that it would be easier to teach them from the beginning," said one shop teacher.

Assuming that the development of an interest in the industrial life about us is a great purpose in this field, just as a taste for reading is a great purpose in literature, the neglect of motivation in these subjects would be paralleled in literature if all the literary selections were made and arranged in sequence solely on the basis of their mechanical difficulties. While that plan would kill an English course, it would prove no more deadly in that field than in these.

### Provision for Initiative

The provisions, already noted, for selection among a prescribed group of models, or selection without other limitation than that prescribed technical elements are included, permits of some choice in upper grades. But this is so very insignificant, as represented in the courses of study, that one may fairly say that it was not considered as a problem in making the courses. It is not specified *who* may make choices. Teachers may prescribe all of the work and fulfill the courses of study, not permitting any initiative on the part of children in the matter.

### Consideration of Relative Values

The curriculum provides practically no opportunity for consideration of relative values. In the suggestions of the relationships of the work to life or of considerations of worths, these elements are relegated to a place entirely subordinate to technical processes. They are suggested as appropriate for "incidental instruction," which usually results in their omission. The very arrangement of work, as in sewing, exercises first, then applications—practice pieces, in which a certain standard of excellence is to be attained, before using the activity in any project—exalts the technical aim above all else.

### Conclusions

From the standpoint of mere technical sequence the curriculum is well developed in all of these subjects. In cooking the course is also meritorious in a well-proportioned amount of thought content concerned with principles and the more intimate relationships of home-making.

On the other hand, the narrowness in organization, the failure to provide for motivation, for initiative on the part of either pupils or teachers, and the entire neglect of all values not inherent in technical processes and activities are all defects which reduce the work to a minimum in educational values. Nothing less than a complete change of viewpoint in the organization and development of the curriculum, in terms of both social values and child psychology, could do much to broaden the work as it ought to be broadened.

### A. Geography

#### A Sample of the Curriculum

As a sample of the course and syllabus in geography, fairly representative of their attitude toward the standards proposed, the work for the second half of the fourth year—called Grade 4B—is here reproduced in full. It is taken from the course of study dated 1911.

#### Grade 4B

##### Course of Study

THE EARTH. Daily and yearly motions; zones.

EASTERN AND WESTERN HEMISPHERES. The continents; their location; bordering waters; chief mountain ranges; great rivers; animal and plant life; peoples; chief countries; large cities.

Duties of citizens and public officials.

##### Syllabus

EARTH STUDY. Daily and yearly motions; the equator; prime meridian and zones studied from a globe and from a map.

THE CONTINENTS. Names; location and relative positions. Names and locations of the five oceans; North, Baltic, Black, Mediterranean, Red, China, Japan, Caribbean and Bering seas; Gulf of St. Lawrence, Gulf of Mexico, Gulf of Guinea, Hudson Bay, Baffin Bay, Bay of Biscay, Bay of Bengal; Appalachian, Rocky, Andes, Alps, Ural, Caucasus, and Himalaya mountains; Mississippi, Missouri, Ohio, Hudson, Columbia, Rio Grande, St. Lawrence, Amazon, Plata, Rhine, Volga, Danube, Nile, Kongo, and Yangtze rivers.

ANIMAL AND PLANT LIFE. A few of the principal animals and plants of the hot, cold, and temperate countries.

PEOPLES. White, black, yellow, brown, and red races.

CHIEF COUNTRIES AND LARGE CITIES. Names and locations of the United States, Mexico, Brazil, Chile, Argentina, England, France, Germany, Russia, Italy, Austria, Hungary, Spain, Egypt, China, Japan;



the City of New York, Chicago, Philadelphia, Boston, St. Louis, San Francisco, New Orleans, Washington, London, Paris, Berlin, Rome, St. Petersburg, Cairo, Calcutta, Hongkong, Peking, Tokio.

**GOOD CITIZENSHIP.** Street Cleaning Department. Collection and disposal of refuse; use of rubbish boxes; street cleaning; street cleaning leagues.

**Duties of Citizens.** To keep receptacles for garbage covered; to refrain from throwing papers, fruit skins, and other refuse into the street, or on the sidewalk; to refrain from obstructing sidewalks or thoroughfares, from throwing anything from windows, and from defacing walks, fences, or buildings.

**Health Department.** Medical School Inspector; school nurse; vaccination, contagious diseases; necessity for quarantine; birth records and certificates; inspection of milk and other foods; sanitary supervision of water supply; disinfection of houses.

**Duties of citizens in regard to cleanliness of body, of clothing, of dwelling, of streets; immediate report of cases of contagion; respect for Health Board notices; anti-spitting laws; child labor laws; requisites for obtaining an employment certificate.**

(See Introductory Note in Civics.)

### **Relation of Subject Matter to Purposes and Initiative of Children**

Take, first, the two standards together that test the extent to which the interests, and the need of initiative on the part of the children—namely, the child's point of view—have influenced selection of subject matter and suggestions on method.

Confining our attention to the geography proper in the part reproduced (i. e., omitting from consideration at this point the part on Good Citizenship), we find nothing suggesting any consideration whatever of children's interests. While it is customary among progressive teachers of geography to arrange their facts around questions or topics that appeal to children, there is no indication of any such tendency here. Nor is any such tendency manifested elsewhere in either the curriculum or syllabus for geography. The point of view is completely that of the adult, the question being, What geographical facts will some day be needed, no matter how unrelated they may now be to the learner?

Provision for encouragement of initiative of either teacher or pupil by directing attention to the broader aims and principles of instruction, such as the causal idea, that give the key to method; or by proposing different sequences that require choice; or by urging the importance of approaching each topic as nearly as possible from the point of view of the particular children at hand, is just as strikingly lacking. Even proposals for the variation of home geography according to variations in environment are almost totally wanting. On the other hand, fixed sequence and uniformity of approach for all children seem to be the things desired. As

evidence of this statement, observe the suggested plan of study, as follows:

"In studying the continents, as wholes, attention should be directed to their comparative sizes (North America being taken as the unit), relative positions, their general contour, their great mountain systems, their great rivers, their large seas, gulfs, and bays, and their important neighboring islands. Then should follow the main political divisions and the positions of important cities.

"In studying a country the following series of topics, as far as they may be applicable to the country under consideration and in the grade in which the lesson may be given, is suggested:

- "1. Location as determined by latitude and longitude, and with relation to surrounding countries and waters.
- "2. Comparative size and shape.
- "3. Mountain systems and important ranges; slopes and plains.
- "4. River systems and important rivers.
- "5. Important cities, their location, and their comparative population.
- "6. Climate, industries, products, and areas of production.
- "7. Form of government and general condition of the people as to education and ways of living.
- "8. Exports and imports, trade, particularly with the United States."

This is a plan of study proposed for all grades. In studying Holland many a teacher would prefer to begin with its most striking feature, namely, the position of much of its land below water level, which would, perhaps, come under the third point here.

In studying Brazil many a teacher would prefer to begin with the fact that much of our coffee is imported from that country, and then trace the reasons for so much coffee production there. That would turn this proposed sequence topsy-turvy. Many a teacher in teaching Japan would like to raise the question at the start how it happened that that little country was able, in the recent war, to defeat the Russians so completely. In searching out the geographical reasons for this victory, the suggested plan would again be completely upset. Any one must admit that any single sequence, no matter how good, if always followed, would be likely to make the instruction formal.

The reply to these criticisms may be made that the proposed plan of study is *suggested*, and that teachers are entirely free to follow any other order desired. But, while there are probably many teachers who assert this freedom, we are convinced that the majority of teachers regard this sequence as practically obligatory. We have talked with a large number who have expressed this conviction. Also, we have been much impressed with the emphasis placed upon this sequence in the syllabus. For example, we have found in the syllabus for Grade 5A, under the heading, North America, the direction that "This continent

and its countries *should* be studied in accordance with the plan presented in the Introductory Note" (that is the plan quoted above). Again, even on the same page, after a list of seventeen states of the United States is given to be studied, the direction is added, "Each state should be studied as far as practicable in accordance with the plan suggested for the study of a country." In 6A, further, we find the direction, "The countries assigned to this grade should be studied in accordance with the plan presented in the Introductory Note." We find the same thing repeated again in 6B; again in 7A; and finally in 7B. This must at least be a very serious suggestion when so much space out of only twelve pages, in all, for geography, is given to it.

While there is not a thing in the syllabus urging teachers to forsake uniformity for individual ways of treating topics, there is another paragraph in the Introductory Note showing an unqualified devotion to uniformity. It reads as follows:

"Most of the work in geography should be done in the classroom. Very little, if any, study at home is necessary. The lesson should generally begin with a study of a globe or a map. This should be followed or accompanied by the reading of pertinent selections from the textbook or supplementary reader. The selections should be read aloud in class, and pupils should be expected to answer questions after a single reading. Then some time should be spent in copying the map roughly from the book or from the wall, indicating such phases of the subject as have been studied. The next lesson should consist largely in questioning the pupils with the map before them and in requiring them to make rapid sketches of maps from memory. This exercise is the best method of fixing geographical knowledge and of showing the pupil how accurate or inaccurate his knowledge is. It is, moreover, the easiest way to teach much of this subject, as well as the easiest way to test the definiteness with which the subject has been learned."

Certainly uniformity is at a premium when any educational authority will attempt to state how several thousand teachers of geography, ranging from the fourth through the eighth grade, should "generally begin" a lesson, and what they should do "then," and "then."

So far as the syllabus itself, therefore, is concerned, it seems fair to say that it interprets the term "suggested" above referred to as a mere euphemism for "required."

Further proof of this interpretation is found in the fact that in at least some of the schools the District Superintendent, in his rapid examination of children in geography, is accustomed to have a large card bearing this list of eight points hung up before the class. Then, in the review of any country, the children follow this order of topics, speaking rapidly. One teacher, who revolted at this plan, followed a different order, of her own, and placed it upon a large card. In order to satisfy her District Superintendent, however, in case he should appear, she placed on the other side of the same card the outline that she knew he

might want. On appearing one day he called for the "chart," and, by mistake, the wrong side was exposed to view without his observing the fact. When the children had begun to recite from it, however, he looked up with surprise, and, seeing the unexpected substitute, he expressed his disapproval in unqualified terms. He had charge of approximately 800 teachers, and it was his duty to give each one a rating that was a prominent factor in determining promotion and salary.

### Care in Organization of Subject Matter

There is a tendency in all studying to drop down to the single, isolated fact as the sole unit of progress, and thus to abandon all thought of organization. In order to counteract this tendency it is one of the special duties of the curriculum to present its subject matter grouped into large wholes having closely associated parts; in that way it can exert a marked influence on classroom procedure.

The extent to which care in this direction has been exercised in this case is indicated in the plan of work for Grade 4B, quoted on page 298. We find there six continents to be located; five oceans; nine seas; seven gulfs and bays; seven mountain systems; fifteen rivers; sixteen countries; and eighteen cities—eighty-three in all, and each one named. And this composes most of the work in geography proper for that half year. More isolated facts could scarcely be proposed for a curriculum. In the course for Grade 5A the part requiring most time is the following:

"United States. States: Massachusetts, New York, New Jersey, Pennsylvania, Maryland, Virginia, District of Columbia, Georgia, Florida, Louisiana, Texas, Missouri, Illinois, Ohio, Minnesota, Colorado, California, Washington. Each state should be studied as far as practicable in accordance with the plan suggested for the study of a country."

In thus directly recommending and even urging the study of the United States by topics so small as individual states, the syllabus stands for a lack of organization that has long caused groaning in this city by both teachers and pupils.

But, in addition, look at the much emphasized outline of eight topics quoted on page 300, which "should be followed as far as possible" in the study both of these states and of all countries. No. 1, location, is unrelated to No. 2, size and shape. No. 2 is unrelated to No. 3, mountain systems, slopes, etc., except in rare instances. No. 5, important cities, here precedes No. 6, on climate, industries, and products, although causally it follows those topics, and No. 8, on imports and exports, is a direct consequence of No. 6, although form of government, as the seventh point, is allowed to break this connection. In other words, one wonders wherein lies the superior virtue of this arrangement of topics. No person can be expected, on reading them over once or twice, to reproduce them in order, through appreciation of their interdependence. They are a list rather than a series, although called a series in the syllabus.

Criticism of this list has already been offered on the ground that insistence upon any one fixed order seriously interfered with the exercise of initiative of both teacher and pupil. Now, however, the criticism is offered that this order itself shows a lack of appreciation of organization, and insistence upon it leads directly away from organization, rather than toward it. If the syllabus had merely listed these topics, as the ones usually most valuable; had forcibly urged the importance of close association of facts; and had given a few examples, showing how it must be secured differently in different countries, then poor teachers in all the grades might at least have felt their freedom, and their results would have been as good, if not better, than now; while the good teachers, conscious both of their freedom and of what good sequence is, would have far surpassed present results.

If, after considering these facts, one turns to the course for Grade 4A and sees that Home Geography, Local History, Good Citizenship, and The Earth are offered as main topics without the slightest attempt to interrelate them; if one turns to the eighth year and finds Physical Geography in the main separated from Commercial Geography; and, if one then discovers no plan for close correlation between the geography and history, one cannot easily avoid the conclusion that organization of subject matter has, somehow, been overlooked in the curriculum in geography.

#### Attention to Relative Values

As previously stated, every study contains a lot of minor, more or less formal, facts, such as dates in history, and individual words in reading; and another lot of more fundamental ideas which, in a way, carry the others and constitute the life of the subject. The proper emphasis of the latter, and consequent subordination of the former to them, are matters requiring much attention to relative values.

The history of geography reveals these two kinds of subject matter very strikingly. Thirty years ago geography was eminently the "science of location." Countries were bounded, mountain systems and rivers were traced, and cities were located, without limit. Maps and map drawing were resorted to in almost every recitation as one means of reviewing and fixing position, and drills on such facts were as prominent as drills in spelling. The highest aim was the vivid picturing of a portion of the earth's surface, or, better, of maps; and, as everything was conceived of as in a fixed status, "static geography" was the only kind known.

Since that time the fact that the whole earth's surface has undergone and is still undergoing endless change, in accordance with great laws of nature, has worked its way down to elementary school geography and revolutionized that subject. The most fundamental idea there at the present time is that of *force*, and on that account geography is now said to be "*dynamic*." The tracing out of the influence of natural forces upon the earth's surface, as it is related to man, has made causa-

tion the most prominent idea in every good course of study, and has led the principles of geography to be regarded as the real substance of the subject. This great change is manifest even in home geography, for children in very many schools now begin the subject by learning how soil is formed, how hills, mountains, and valleys are made and destroyed, how water is carried by the winds, etc.

The location of places is not omitted; in fact, children, after having left school, can now probably locate the more important places more successfully than formerly. But location has been approached much as a new word in literature, i. e., in the midst of a context that is worth while; and it has been reviewed, so as to be remembered, by abundant associations in chains of thought, touching industry, commerce, and natural law, that have real substance.

What conception of geography does this curriculum seem to stand for? Is it a *static* or a *dynamic* one? For a suggestion as to the answer turn to the latter part of the Introductory Note quoted on page 301. We read there that "Very little or any study at home is necessary." That seems somewhat surprising, if geography is a subject with a real content, comparable to that in history or literature. But further on we find rapid sketching from memory recommended, with the statement, "This exercise is the best method of fixing geographical knowledge. . . . It is, moreover, the easiest way to teach much of this subject. . . ." One wonders "How much?" And when, in these four pages of introductory notes, we find not a single reference to the need of subordinating the more formal facts to the others, a suspicion is awakened that there aren't any others and that the whole point of view is static.

Now turn to the course itself to see. The old style bounding of countries and states is, fortunately, eliminated by the suggestion in Grade 7A. "Pupils will be expected to locate any state by reference to a neighboring state or to some physical feature, such as a body of water, or a range of mountains."

But, if we examine the Home Geography in Grade 4A, we find map-drawing to be the beginning topic, and location of points in New York City to constitute most of the other work that is strictly geographical. In the course in nature study for Grades 3 and 4 there are also some geographical topics, but they, too, are remarkably formal when compared with what is now done in home geography in many places. It would be hard to imagine a course more formal than that for Grade 4B. In the other grades the great emphasis on location, the omission of direct reference to the importance of causation, the insistence that the same formal outline be followed alike in the study of all countries and states, and the delay of all reference to physical geography—which must usually be the starting point in the causal chain—until the eighth year of school, when geography is an optional subject, if a foreign language is taken—all these facts together make this curriculum static and dead.

This course, as found in print, shows, as a whole, almost no influence

from the educational thought in the United States during the last twenty-five years; and its character is a direct hindrance to good teaching of geography in this city.

The regular amount of time allotted for this course is twenty-seven minutes per day in Grade 4; twenty-four minutes per day in Grades 5 and 6; and three forty-minute periods per week in Grade 7. It is possible that an average teacher might do the exact amount of work prescribed, in the way prescribed, within this time. But if any teacher attempted to add enough subject matter to give life to the formal work, the time would prove utterly inadequate.

### i. Physical Training

#### Facts Showing the Character of the Curriculum

The following paragraph is taken from the Introductory Note for the curriculum in physical training:

"Gymnastic exercise should conserve organic vigor, lead to correct posture, and train to quick and definite action. It should be based upon muscular coördinations, and should make a progressive demand upon muscular effort, complexity of movement, and power of heart and lungs. All available means of arousing and maintaining interest, such as the use of apparatus, and a change from classroom surroundings should be employed."

In accordance with this paragraph, the lessons in physical training consist of freehand and light apparatus exercises, and games. Each year's work is arranged in series of lessons, each lesson to be given for a stated number of periods. In the lower grades this work takes place in the classroom. In the upper grades, where light apparatus is used, the pupils frequently exercise in the gymnasiums, courts, or yards.

In the first three grades emphasis is placed upon marching, with drill in obeying commands. The children are urged to pause between the two parts of each command, and to wait always for the executive command.

In the arm-stretchings and hand-placings, "voluntary and isolated control of the arm as a whole" is sought. These exercises are followed by skipping, stretching, and breathing exercises. "In all respiratory exercises the children should be urged to a forced respiration. Exaggerated lifting of the shoulder should be avoided." Leg-bending, rising on toes, trunk-bending, arm-circling, hand-clapping, and point steps follow in order. The lessons usually conclude with a trunk-bending exercise.

The following is a typical lesson:

Grade 1—First half year. Lesson VI.

1. Stretching.
2. Marching and skipping. Arms folded behind—Place!
3. Breathing—Begin. Three times. Hands on hips—Place!
4. Hand on shoulder, right—One! 8—8—8.

5. Arm-stretching sideways, right—One! 8—8—8.
6. Rising on toes—One! 8.
7. Bending leg upward, right—One! 8 or 16. Hands on hips—Place!
8. Trunk-bending sideways, right—One! 8—8.

Of the five lessons per week, the syllabus requires that at least three be given to gymnastic work. "Not more than two days per week (thirty minutes) may be devoted to the games, training for the button test, class athletics, or folk dancing named at the end of the syllabus." This quotation from the general introduction to the Course of Study indicates the emphasis placed upon formal gymnastics. The tendency is to minimize the work in games and to make the physical training primarily gymnastic drill.

In more than twenty classes observed only those above the sixth grade were taken to the gymnasium for physical training. The result of a questionnaire given to 207 girls who, less than a year ago, completed the elementary school course in 53 different schools in New York City shows the following:

Those having had no games in school.....	32
Those having had games out of doors.....	24
Those having had games out of doors sometimes.....	15
Those having had games in classroom and gymnasium.....	131
Miscellaneous answers .....	5

Of the 131 girls who played games in classroom and gymnasium, eighty-five had this work only after they entered the seventh and eighth grades.

Of the 207 girls questioned, 151 had had physical training every day; 47 had had it two, three, or four times each week; the other nine had had two-minute drills after each lesson. Remembering that there are only five periods per week given to this entire subject, we get here rather definite information as to the prominence of the games.

In many schools there are no facilities for running, folk-dancing, and athletics. Teachers are not trained to do this kind of work, and have little interest in it. It takes time for forty children to pass from a fourth floor classroom to a basement gymnasium or court. Teachers have not the time, strength, or desire to do this extra work; hence the time planned for games and dancing is very often devoted to gymnastics in the classroom.

In many buildings, too, the courts or gymnasiums are dark, poorly ventilated, and generally unattractive and unhygienic. Teachers feel that gymnastic exercise given in the classroom is a legitimate substitute.

Teachers explain also that during the game work children become noisy and unmanageable. It takes time to get them settled down to work again, and entirely under control.



### Provision for Motive

It is plain, from all this, that the curriculum in physical training is composed chiefly of gymnastics, planned from the adult viewpoint exclusively, like the course in arithmetic (page 287). The needs of the child, to be sure, form the basis for the plan, but not those that he is himself actively interested in. Unless he is greatly concerned about his health in general—and he would be in an unhealthy state of mind if he were—and unless, also, he is able to appreciate the importance of correct posture and muscular coördination, most of this curriculum must seem to him mechanical, unnatural, and lifeless.

Interest, according to the introductory note quoted at the beginning, is declared to be desirable; but it is simply as a means of carrying the pupil through the movements, and not as an important end in itself; and there is little attempt to choose subject matter in the field that can arouse interest, as literature arouses it. In other words, while modern educational theory requires that the formal elements in beginning reading, geography, history, and many other subjects be subordinated to others that are stimulating, and while the best modern practice in these fields centers in this effort, that entire conception is, in the main, ignored in this physical training.

We are convinced that the pupil's attitude toward the subject is as important in this field as in any other; indeed, probably more important, since health is so much involved. Physical training should develop an interest in play, a knowledge of games, and a skill in them, that will permanently identify one with healthy sport, just as literature should develop a permanent taste for reading, and nature study a permanent enjoyment of plants and animals.

This being accepted, a curriculum in physical training should be selected with reference to the pupil's interest, just as in the case of these other subjects. That means no abandonment of the health aims that seem to the adult desirable. In fact, they can be gained as well, or better, through exercises which are natural, spontaneous, and enjoyable. Movements performed on the gymnasium floor or in the playground can involve the same principles and elements as those belonging to classroom, laboratory and studio, while their richer content will make them much more effective with the child. But this plan does mean the subordination of the adult's purposes to things that seem to the pupil worth while. He should run in proper form, or keep the body erect and hold his bow and arrow in a prescribed way, not because he wants to have a flat back and high chest—the adult's objects—but because he knows that these positions bring results, and he wants to win the race or prove his skill as a marksman.

So he should bend the arms and legs, and develop other portions of the body, by climbing, running, dancing, and by performing other

activities that, by their long popularity, have been proved to be classic. The absence of even a tendency toward this conception of physical training seems to us reason for condemnation of this plan of instruction, so far as provision for motive is concerned.

### **Provision for the Exercise of Initiative on the Part of Teachers and Pupils**

Considering again the typical lesson given, one asks, What is there here that allows the initiative of a six-year-old child? What interest has he in breathing exercises, especially when he is urged to hold the chest high, to lower the shoulders, to inhale through the nostrils, and to exhale through the mouth? Why should he be interested in bending his arms in a definite way for a stated number of times and to the teacher's count? The marching and skipping exercises are suggestive of more freedom, but unfortunately they cause too much noise, confusion, and dust, and are therefore generally omitted. But when they are given the children are held down to the dull monotony of the teacher's count, sometimes varied by the tap of the ruler, the clapping of hands, or the snapping of the fingers. The children must march in attempted military form with weight on toes, chin in, chest high, hips back, and the steps must be carefully numbered and regulated in order to bring each child to his place by his desk at a given time. There is little provision for initiative here. In that respect such exercises contrast strikingly with physical training in which the pupils express an idea or emotion which seems worth while by dancing, pantomime, or other dramatic representation; or in which the muscular effort put forth aims at some definite effect, as in the maintenance of squad formation in marching, in hitting a ball, throwing a ball into a basket, swimming to a given point, outrunning a competitor, or in any one of the infinite number of things to do in games.

And note the freedom granted to the teacher:

"The gymnastic exercises are arranged in programs or lessons. Each lesson is intended to be given entire every day for two weeks."

If this plan is carried out there is little time left for games and dancing, unless the recess period, which, by many teachers, is disregarded, be utilized. And, remembering that each lesson is to be given in entirety each day for two weeks; that the teacher is expected to adhere strictly to the order in which the lessons are arranged; and that the work must stand the criticism of the supervisor, who judges the teacher's success by the children's ability to do the prescribed work, it appears that the teacher has as little opportunity for originality, choice, and initiative as the child.

### **Organization of Subject Matter**

Does the subject matter suggest a field of scattered ideas and isolated facts, or is it grouped in large wholes having closely related facts?

This standard of criticism is more difficult to apply to physical education than to those subjects in which the course of study deals more directly with ideas than with motor activity through which ideas are expressed. If the lessons for each grade consist of skeleton outlines lacking in suggestion, barren of interesting material, and intended only to attain certain physical results, then the necessity for organization of material is slight, save as certain exercises are selected and progressively arranged to provide for nutritive stimulation, postural correction, and psychological control. If, on the contrary, the work in physical education is considered as a part of the natural, present life of the child; if it offers material through which the child can live out freely and joyously the things in which he finds present interest, then the course of study can no longer be an outline of cold, unrelated, trunk-bending, arm-stretching, and breathing exercises; but it will suggest material correlated with many home and school activities and interests, in the enjoyment of which children will bend their knees, stretch their arms, and breathe naturally.

The following quotation from the introduction to "School Gymnastics" gives a general idea of the principles upon which the arrangement of lessons and exercises is based:

"The order in which the exercises are arranged follows a general plan, which gives all-over exercise in each lesson without overfatiguing one part. The lessons all begin with a preliminary stretching of the arms upward and sideways, to assist the body to a good standing posture from which to take the exercises that follow, and with a drill in marching, facing, and running which secures general attention from the class and gives opportunity for ventilation. A breathing exercise is taken, and is followed by the regular table of exercises. This table begins with work for the extremities—the arms and legs—to increase the flow of the circulation away from the central part of the body. The central part of the table contains jumping exercises which, like the running, produce maximal effects upon the circulation and respiration. The table closes with trunk exercises, which, in their use of large muscular groups, again approach maximal effects, though not such as to embarrass the respiration as do running and jumping. The progression of the exercises and their grading for children of different ages are governed both by their physiological and mechanical difficulty and by the child's ability to isolate or coördinate muscular movement."

Here is clearly indicated the emphasis placed upon physiological and mechanical processes.

It is the coldly logical and scientific attitude that is in control, rather than the pedagogical, and it has the same general effects that arrangement of subject matter from the standpoint of pure science in any field has upon children. In this case it trains the body too much within itself, without sufficient regard for the attitude of the mind and for the indirect effects of exercise upon disposition and personality; and it develops

various forms of ability which are not, in identity, similarity, or analogy, closely enough related to the interests and activities of human life to justify the time and effort given to them. When physical education presents a program which is psychologically and physiologically sound, and therefore pedagogically acceptable, it will find itself in organic relationship with modern educational thought to a degree hardly hinted at in this arrangement.

### Attention to Relative Values

Do fundamentals receive proper emphasis, and are the more formal and less important parts subordinated to the vital and more real ones?

A study of the syllabi in physical training convinces one that much thought has been given to the progression, arrangement, and combination of exercises. The matter of proper arrangement and emphasis depends upon the viewpoint. It is stated that postural correction has governed mainly both the selection and combination of exercises. If postural correction is the most important end to be gained in physical training, and if this can be obtained through artificial and mechanical means, no doubt the arrangement here suggested is not to be questioned. If, however, instead of being considered the end in physical training, posture becomes a definite, needed, and much desired means to the attainment of certain interesting ends, far broader and farther reaching, the emphasis is shifted. Then the mechanical forces appear no longer either in the lead, or in isolation. Connected naturally with the activities in which he is interested, these more formal elements give up much of their formality in favor of the active, developing child and fall naturally into place as means by which he is able to do the things in which he takes present delight and satisfaction.

Applying this standard, we find that the course of study shows marked emphasis upon posture and coördination. The lessons and exercises seem planned to bring about these results, and all other aims are relatively subordinated. According to the aims of physical training as stated in the introduction to the course of study this course of procedure seems logical. But, measured by broader psychological values and principles, these ends become of secondary importance and the course of study appears mechanical and illogical. It is lacking in proper emphasis of the more vital and real elements in physical education.

### Summary

In judging this curriculum we have assumed that a healthy course in physical training should be judged by the same general standards as a curriculum in any other normal subject; that is, we have assumed that its worth lay first of all in its appeal to the *mind* and feeling of the pupil. In order to make this appeal it cannot be composed merely of a list of movements, although it may include movements; but it must have a

content comparable in richness with that of literature, or music, or industrial art, or nature study; and through this rich content it must affect the leading habits of the pupil within its realm, just as each of these other subjects is expected to affect leading habits within its field. In brief, it is responsible for influencing the child's tastes and purposes, with reference to physical exercise and sport; his habit of attending to relative values in this field; his tendency to organize his experience along this line; and his self-reliance in executing plans for taking exercise and playing games.

Judged by this standard this course and syllabus are sadly lacking.

## j. Hygiene

### Quotations Showing the Character of the Curriculum

In the course of study, physical training and hygiene are considered together. Since, however, according to the scheme of work outlined in the syllabi, there appears no close relationship between the two, it has seemed permissible to discuss them under separate headings. The following quotation from the Introductory Note in the course of study for physical training and hygiene suggests the scope and character of the instruction in the latter subject:

"The teacher should aim to lead pupils to cultivate habits of cleanliness; to care for health, eyes, ears, mouth, teeth, and nose; to give attention to food and clothing, ventilation, rest, sleep, and play; to maintain good position while standing, sitting, writing, sleeping, and walking. The important facts with reference to growth, structure, and care of the body, and the conditions under which it works most effectively, should be taught in a progressive way, so that one specific topic may be made prominent each year. As required by law, physiology and hygiene are to be studied with reference to the effects of alcohol, tobacco, and other narcotics, on the human system."

More detailed directions, typical of those given for a particular grade, are found in the following paragraph, pertaining to the 2B grade:

"Instruction should be given to pupils in regard to the most wholesome foods; the importance of regularity of eating; growth and nutrition. The lessons should include a brief description of the anatomy, composition and care of the teeth, and the importance and beauty of good teeth.

"Effects of alcohol and narcotics. The teacher in preparatory oral lesson should consult one or more of the text-books in physiology and hygiene presented by the Board of Education."

For further discussion of instruction in this subject, see discussion of recitation observed, page 243.

For Grade 7B the following work is outlined:

"Pupils should be taught the important facts concerning respiration; the anatomy of the lungs and the mechanism of breathing; the general structure of the heart, lungs, blood vessels, and lymphatics; and the relation of tobacco to the growth of the body in size and strength."

In planning the course the aim has been to make prominent each year one specific topic. To this end the following arrangement has been adopted:

- Grade 1A. Cleanliness—Effects of alcohol and narcotics.
- Grade 1B. Cleanliness of different parts of the body.
- Grade 2A. Dietetics—Effects of alcohol and narcotics.
- Grade 2B. Foods.
- Grade 3A. Clothing, play, posture—Effects of alcohol and narcotics.
- Grade 3B. Posture, endurance, speed.
- Grade 4A. Pure air, ventilation—Effects of alcohol and narcotics.
- Grade 4B. Care, use, and structure of the different parts of the body.
- Grade 5A. Emergencies—Effects of alcohol and narcotics.
- Grade 5B. First aid.
- Grade 6A. Board of Health—Effects of alcohol and narcotics.
- Grade 6B. Contagious disease.
- Grade 7A. Study of the body—Effects of alcohol and narcotics.
- Grade 7B. Anatomy of throat, lungs, etc.
- Grade 8A. Nervous system.
- Grade 8B. Habit formation.

#### Attention to Relative Values

The effects of alcohol and narcotics is the only topic taught in every grade. This work is presented through the reading of text-books in class. These texts treat formally the effects of stimulants and narcotics in various anatomical and physiological relationships; of the distillation of alcoholic drinks and of the sure and horrible effects of smoking and drinking.

In the syllabus the subject of alcohol and narcotics is given a separate and entire paragraph, while the subject of cleanliness is referred to directly only in Grades 1 and 7, and indirectly in Grades 2 and 4.

We do not believe that temperance hygiene should be disregarded. The criticism is upon the emphasis given to it. If the personal and physiological aspects were subordinated, and the emphasis placed upon the social, industrial, and economic aspects, personal and civic health would be encouraged, and abstinence made more likely.

While by the arrangement of the course of study the subject of alcohol and narcotics is given first place, that of the anatomy of the different parts of the body is placed second in importance. In Grades 2, 4,

7, and 8 decided emphasis is given to this subject, while in one grade only—the sixth—is reference made to civic health. Respiration is to be studied in Grades 3, 4, and 7, while the subject of the prevention of disease is mentioned in the sixth grade only.

In many of the schools hygiene is entirely neglected, unless one may consider the "morning inspection" a substitute for it. In a few of the buildings old "Temperance Primers" are used in the primary grades. In general, however, the hygiene that is offered is given above the sixth grade.

If the formation of correct habits be the aim of this course, it is reasonable to believe that it should provide health instruction for children before they enter the sixth grade. Especially is this true since so many of the foreign children leave the public schools as soon as they can obtain their working papers—the conclusion of the 5B grade.

The conviction that most of the instruction in hygiene resolves itself into the teaching of physiology, anatomy, and alcohol and narcotics; that this instruction is given mainly in the upper grades; and that it is left largely to the discretion of the individual teacher is substantiated by visits to many schools and by personal talks with supervisors, principals, and teachers. It is verified also in a very interesting, although perhaps less reliable, way by a questionnaire to which answers were received from 200 recent public school pupils, representing more than forty different schools in the city.

Of these pupils, 138 stated that they had had hygiene during their elementary school course; seventeen said they had had physiology; twelve had had no work of this kind; and about thirty had had "very little." At first sight this result seems encouraging, since it indicates a decided emphasis upon health instruction. When, however, these pupils were questioned regarding the topics studied the result showed quite a different emphasis, and indicated that anatomy, physiology, alcohol, and narcotics are being taught in the schools under the name of "hygiene," so that pupils are leaving the public schools ignorant of the true meaning and significance of health instruction. The result of the questionnaire shows that the hygiene in the more than forty schools included the following topics:

Structure of the lungs mentioned by	about	90	per cent.	of the pupils
Structure of the heart	"	87	"	"
Fresh air	"	80	"	"
Structure of the skin	"	75	"	"
Bones	"	75	"	"
Care of the hair	"	70	"	"
Alcohol and narcotics	"	70	"	"
Stomach	"	68	"	"
How and when to bathe	"	50	"	"
Civic League	"	20	"	"
Department of Health	"	15	"	"
How to care for your bed	"	12	"	"

The fact that the subject of fresh air was mentioned by about 80 per cent. of these pupils may be due to the influence of the little book on Tuberculosis which has been placed in the hands of teachers by the Board of Health. Invariably in schools in which this book has been used the pupils mentioned fresh air as a topic discussed.

That about 70 per cent. mentioned the care of the hair as a subject discussed is suggestive of the influence of the school nurse and of the so-called "morning inspection." It is significant, also, that the organization of civic leagues is reflecting a helpful influence upon the hygiene in the schools.

When it is noted that the number of those mentioning the Department of Health falls to 15 per cent., and that only 12 per cent. had been told how to care for their beds, while about 90 per cent. had been taught the structure of the heart, the overemphasis on mere anatomy is strongly suggested. From given lists these pupils were asked to select those topics which were most frequently discussed in their hygiene work. The following results were obtained:

Structure of the lungs mentioned by about 90 per cent. of the pupils								
Structure of the heart	"	"	"	86	"	"	"	"
Stomach	"	"	"	70	"	"	"	"
Alcohol and narcotics	"	"	"	50	"	"	"	"
(including how alcohol is made)								
Department of Health	"	"	"	10	"	"	"	"
Prevention of sickness	"	"	"	2	"	"	"	"

These results, corresponding in general with those before noted, give added evidence of the emphasis on anatomy and physiology, and of the disregard for hygiene.

Considering the relative importance of these things in life, serious error, we think, has been committed here. Undue emphasis has been placed on the more formal and less valuable parts, while the more vital topics have been subordinated.

And not only are the wrong topics emphasized, but the worth of knowledge is overestimated. The tendency now is to value mere information in this field less, and to esteem more highly useful reactions and habits. But there is little manifestation of that tendency in this plan.

### Organization of Subject Matter

This subject might have been organized around the pupil's own interests; but there is far too much that is purely anatomical and physiological to allow that arrangement. Or it might have been correlated, in important parts, with the physical training. But there is no evidence of serious attempts in that direction. Or it might have been intimately correlated with nature study, so that the pupil's interest might have been greatly increased and that he might have been relieved of the danger of a



disturbed self-consciousness by approaching the structure and function of his own body through the study of plants and animals. But this possibility, also, has been overlooked. In fact, there is little organization here; the course is principally a list of topics that, supposedly, a child ought to know. This criticism is not given, however, without appreciation of the fact that, under a few of the subjects emphasized in the course, there are suggested helpful, interrelated topics which, if valued and intelligently utilized by the teacher, might result in making the work in hygiene of much value.

The fact should be borne in mind, also, that the law in regard to temperance instruction makes it difficult to plan a well-organized course.

### Provisions for Motive and Initiative

Enough facts have, perhaps, already been presented to show that little provision has been made in this course either for the motive of children or for the exercise of individuality of children or teachers.

Yet of all subjects hygiene needs most to be related to a child's own interests and purposes, since it should affect his conduct directly. The truths that it offers should be a mere means by which habits may be established. But the instruction as here planned appears largely indifferent to any result beyond information. It is a bald presentation of facts, without that setting which makes one reflective in regard to them until they become parts of habitual trains of thought.

For example, as an abstract subject, food is most uninteresting, especially when the emphasis is placed upon nutrition. But in the cooking room, where the child has the opportunity of seeing the food in process of preparation, and takes an active part in its preparation, the subject of food becomes of present interest. With such an approach, hygienic principles may be discussed, and hygienic habits inculcated through the use of material directly related to the child's present interests and activities.

So almost any one of these topics can be made influential on conduct when approached in a skillful manner. But such approach is by no means a matter of method alone. It depends approximately as much upon skill in selection and arrangement of subject matter as upon skill in presentation. One of the discouraging facts about this curriculum is that the task has seemed too easy. At least the manner of performing it gives little indication of a deep appreciation of the degree of skill required to do it well.

### **C. Conclusions as to Quality of Curriculum and Syllabi of the Kindergarten and Elementary School**

#### **1. The Kindergarten**

The want, at present, of a printed curriculum and syllabus that are actually followed in the kindergarten has made it impossible to discuss these subjects, in detail, as related to the kindergarten. But the curriculum followed, as seen on visits to various kindergartens, indicates that, with partial exceptions, the plan of study for that age of children is in substantial harmony with the standards set up. That curriculum, therefore, is a direct aid toward securing the kind of instruction that is desired.

#### **2. The Elementary School**

##### **a. Source of Data for Conclusions**

The data on which the following conclusions are based are principally the printed statements in the curriculum and syllabi. For a few subjects such printed matter is not at hand, or is partly out of date. Also the significance of occasional statements has had to be determined by seeing how they were interpreted in practice. On these accounts we have occasionally gone beyond this source. But this printed matter, taken as it stands, reveals a very important plan of work, and it is mainly this published plan that furnishes the data for the following conclusions:

##### **b. Provisions for Motive**

In order that instruction may affect the hopes and purposes of pupils, the subject matter must be intimately related to human interests, and to the interests of the children in particular. It is difficult to attain this ideal; but every good curriculum shows efforts in this direction, with at least partial success here and there.

To what extent does the curriculum here discussed meet this requirement? It is necessarily met to a large degree in literature, because classic literature is called classic partly because it deals only with vital human problems. The course in cooking, also, largely meets this responsibility.

Outside of these two the requirement is met in only a slight degree. There is no attempt, for example, to organize the subject matter of geography about human problems; nature study and elementary science do no better; they are approached from an encyclopædic and scientific point of view entirely. The grammar likewise shows the scientific standpoint only. The English history has almost no connection with present life. And the following subjects—music, composition, sewing, drawing,

shop work, physical education, and arithmetic—place the emphasis plainly on technical efficiency. The courses are, in general, baldly abstract; and, if they appeal to young people, it is due rather to accident than to any skillful provision for motive on the part of those who selected their subject matter.

The seriousness of this neglect of motive for particular children is seen, for example, in the course for the seventh school year. That is a year in which the subject matter should make a special appeal to the pupils, because great numbers of them now withdraw from school at the end of the sixth year, or during the seventh. Yet we find the following subjects in the course: Constructive and inventional exercises that have little purpose, as a prominent part of arithmetic; constructive drawing unrelated to actual construction; shop work in which a series of models has to be followed; elementary science patterned after college work and taught as a science; an outline of the entire history of England; and grammar taught as a science. One naturally suspects that such a course and truancy are closely related.

#### c. Attention to Relative Values—Judgment

As has been stated above, the only basis for judging the value of ideas is found in their relation to mankind; and, not showing an interest in the establishment of such a relation, the authors of the courses and syllabi may be expected to show carelessness, in respect to values, in their selections. And that is what has happened. A more superficial and static course than that in geography would be hard to find. The composition omits some of the most important factors in good composition. The arithmetic might omit nearly one-fourth of its present matter to advantage. A few things in English history are needed, but only a small portion of that now covered. Neither sewing, nor drawing, nor shop work calls attention to the richer portion of the subject matter in its field, technique alone being recommended. In brief, motive not being considered, many topics that have little worth are included and many others that are a very source of life are omitted.

#### d. Attention to Organization—Imagination and Reasoning

Organization has to do with the association of ideas. The indifference with which this association is treated is indicated by the neglect of correlation of studies with one another. There is practically no attempt to correlate history and geography; or history and civics; or geography and nature study; or nature study and hygiene; or literature and composition; or arithmetic and shop work; or shop work and drawing.

It can hardly be that the correlation of studies was entirely over-

looked by the authors of the curriculum—it is a topic that is too often discussed for that. Little value must have been attached to it.

This attitude indicates that the interrelation of ideas within each study will also receive scant attention. That is strikingly true of some of them, particularly of geography, history, and nature study. The underlying principles, or unifying ideas, of these subjects being largely omitted they fall apart into detached facts, having the minimum amount of organization.

Several other subjects, especially music, shop work, sewing, arithmetic, and, to a great extent, elementary science, stand for a sequence that is technical or scientific. But organization beyond that, securing a careful grouping of facts, so that the broader, and to the children more significant, truths stand out clearly as the unifying ideas—that organization is largely wanting.

#### **e. Provision for Expression of Individuality of Teachers and Pupils**

In a certain school, which has six classes at the same point of advancement, exactly the same topics in each study are mapped out each week for all the pupils. Thus nearly 300 children are required to cover the same ground at the same rate, week after week. That indicates the prevailing attitude toward individuality in the city, an attitude to a great extent produced by the curriculum and syllabi.

Observe, first, what provision these two make for the individuality of children. In the composition work, instead of cautioning against too much reliance on imitation of other writers, imitation is really emphasized as the controlling idea. There is no warning given against too much concert work in music, although that is one of the prevailing errors. The sewing and shop work are so planned that dictation seems to the teachers in those fields to be the one necessary method in class. Throughout the curriculum and syllabi there is remarkably little reference to any need of adapting subject matter to pupils; and there is almost no reference to the importance of teaching children how to study alone, or to the best ways of doing it.

Take next the teachers. In nearly every subject—at least in literature, history, geography, nature study, elementary science, composition, and arithmetic—the syllabus attempts to tell how any topic in that field should be taught. Instead of urging each teacher to adapt her method to individual conditions—including her own—there is a direct attempt to reduce the method in each study to a formula.

Of course, such formulæ cannot cover all cases and meet all needs. They are accordingly supplemented by suggestions. For instance, in history, throughout the sixth and seventh years, "No notes should be dictated by the teacher, nor should home study be required of pupils." First, in Grade 8A, "in history an earnest study of the text-book is rec-



P. S. 89, MANHATTAN.

TYPES OF SCHOLARS. COLORED CHILDREN AND AMERICANS. SHOWING COSMOPOLITAN CHARACTER OF SCHOOL POPULATION.  
In the elementary schools of New York City there are children of each of at least 54 nationalities.



commended." Likewise, in beginning reading in Grade 1A, "the use of diacritical marks as a help to reading is optional."

Many of these suggestions are much needed, and probably the formulæ are often helpful; but it is their *source* that is here of special importance. Ordinarily classroom procedure is determined in a broad way by the working aims of instruction; and, in a more detailed way, by the principles of method, as drawn from psychology. But there is no attempt here to connect the details of classroom method with either the aims or the principles of instruction by basing these formulæ and suggestions on the two. There is usually no reference to aims and principles in the syllabi. The result is that these formulæ and suggestions find their basis in the authority of the Board of Superintendents, who issue them. For this reason they seem to the teachers very arbitrary—whether they were originally so or not—and, although called "suggestions" in the syllabi, they have the effect of directions or requirements, since they are based on the authority of superior officers.

In remarking that there is usually no reference to aims and principles in the syllabi, we do not overlook the fact that there is some discussion of these matters. For example, in the Introductory Note for geography, the intellectual purposes of geography are stated as follows:

"1. Geography may be made to train the observing powers.

"2. It may be made to train the imagination.

"3. Rightly taught, geography trains the memory.

"4. Geography should also be made, particularly during the last three years of the course, to train the reasoning powers. When you ask a child to classify the natural features of a country—rivers, for example—according to some common property, as navigability, or the products of a country, as necessities and luxuries; and still more when you ask him to generalize after he has classified, as, for instance, to determine the status of a people after a classification of their products, you are training him to reason."

But such statements as these are passed over because they are too general to have much influence on practice. One reason for reproducing them here is to show how little basis, beyond personal authority, the writers of the syllabi really had in mind. Incidentally, what is more discouraging for a teacher who is in close touch with modern educational thought than to find a course of study, that she must follow, prefaced by such academic and outworn statements as these?

There is another important fact concerning these formulæ and suggestions in the syllabi; i. e., there is usually only one solution offered for the mastery of any one kind of difficulty. For example, only one plan is proposed for the appreciative reading of a masterpiece of literature, and only one order of topics for the teaching of any country in geography. Likewise, only one suggestion is usually made for solving each class of minor problems. In composition for Grade 3A, for instance, we find the following:

"The pupils should construct statements from questions or directions. The teacher and the pupils working together should construct paragraphs."

Of course, there might be several ways of getting pupils to construct statements and paragraphs. But, apparently, this method is the best; otherwise, presumably, others would have been suggested. And, by presenting it alone, the bad effects of the exercise of bad judgment by the teacher are avoided. Thus the teacher throughout all the syllabi is generally relieved from the danger involved in the exercise of choice.

We are forced to conclude, then, that so far as the individuality of children is concerned the curriculum and syllabi not only make no provision for preserving and developing it, but that their influence tends somewhat in the opposite direction.

So far as the teachers are concerned the curriculum and syllabi are a positive help in the sense that every teacher must follow a course of study; there would be chaos in any school without one. But beyond that they directly curtail the teacher's freedom. In their general plan they refuse to trust the teacher by putting the aims and principles of instruction before her, clarified by illustrations, and by allowing her to weigh, select, and try. That is a necessary condition of growth for the teacher, to be sure; but growth with that risk would, it seems, be too dear. On the contrary, to the greatest extent possible, the teacher is told specifically what she shall do. What wonder, then, if the average teacher feels that she has little more to do than to *obey*?

#### **f. Standards Actually Followed in the Present Curriculum and Syllabi**

It is evident that the standards proposed by us for judging curriculum and syllabi have been largely ignored. In order that the situation may be more fully understood it is pertinent to ask, What standards were actually followed?

That question brings us back to the elementary school working theory that was stated to be an important factor in determining the quality of classroom instruction (page 249).

The influence of that theory upon the curriculum and syllabi should be noted. The first article—belief in the necessity of unlimited uniformity—explains why 650,000 children, representing all kinds of environment and ability, are given substantially the same curriculum, to be covered in the same time; why classroom method is reduced as far as possible to formulæ; why both these formulæ and the numerous other suggestions are based on personal authority rather than on the aims and principles of instruction; why, in brief, scarcely any attempt has been made here to provide for the individuality of either teachers or children.

The second article—the belief that the core of instruction consists in those facts and kinds of skill that are automatically usable—explains why





P. S. 21. MANHATTAN.  
Types of Scholars. Italians.



the underlying principles and richer subject matter in many of the subjects, such as geography, shop work, and music, for instance, have been neglected for the more formal portions.

The third article—the belief that the most desirable element in scholarship is accuracy in details—accounts for the remarkable lack of organization in the subject matter. Details being, individually, the center of interest, their association either by correlation of studies or by careful grouping of facts within each study becomes a negligible matter. The only phase of organization that has received much attention is that of sequence within particular studies; but that is confined to a few of the studies, and the sequence secured is one for adults (logical) rather than one for children (psychological).

The fourth article—the belief that the content of curricula should be selected with reference to the distant future—accounts for the want of subject matter that appeals *now* to children, and, therefore, that affects their present conduct.

The curriculum and syllabi give little indication that their authors have made a close study of present social life with the object of discovering the principal qualities that make one an effective participant in it. Nor do they give much indication that their authors have made a close study of children with the object of discovering those characteristics that must be used as the basis for growth. On the contrary, they contain much evidence that their authors are not much concerned with *growth*; that they are not interested in the development of children through the agency of teachers who are themselves developing; their point of view is static.

The most striking fact about the curriculum and syllabi is the want of educational leadership that they display. Barring a few exceptions they could both easily have appeared twenty years ago, in spite of the fact that the last twenty years have been years of remarkable educational progress, and particularly in the field of elementary instruction.

#### **g. Effect of the Curriculum and Syllabi on the Attitude of Teachers**

The effect of the curriculum and syllabi on the feeling of freedom among teachers is easily traced. Their judgment being appealed to, or relied upon, at scarcely any point, they naturally reach the conclusion that there is no provision for their individuality in this printed matter; but that, on the contrary, they are distrusted and restrained by it. Of course, printed directions are not always followed. And it remains to see how the schools are supervised, before final conclusions can be reached as to the degree of freedom that the teachers actually enjoy in practice.

#### **h. Effect of Curriculum and Syllabi on Instruction in the Elementary School**

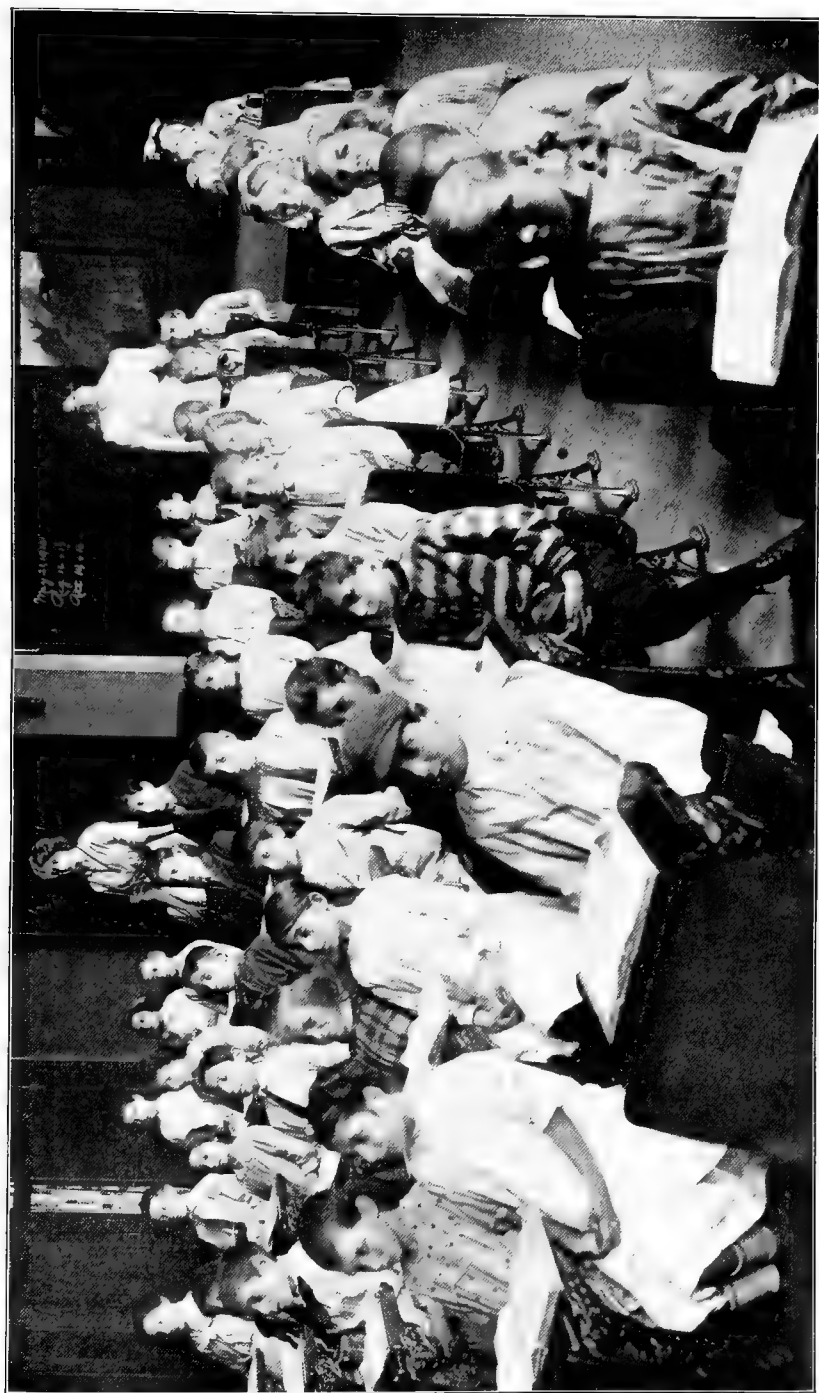
According to the by-laws of the Board of Education (paragraph 8, section 40) these syllabi outline the minimum curriculum, thus making it peculiarly binding; and whether that regulation is fully enforced or not they exert a great influence on the quality of classroom instruction. Resting on so low a plane, their depressing effect on active-minded, progressive teachers is not easily overestimated. It would be next to impossible for a good teacher to present the course in geography for Grade 4B or 5A, as now outlined, in a way that would make the instruction even fairly satisfactory. And the same must be said of many other parts of the curriculum. So far, then, as their exclusive influence is concerned, the curriculum and the syllabi not only fail to inspire good teachers, or to encourage them by showing the relation of the aims and principles of education to subject matter and method, but they directly limit them to low ideals.

Probably some of the leaders in the New York City system would admit that the present plan does take little cognizance of the good teacher; and they might defend it on the ground that the good teacher can look out for herself.

Consider then the young and the poor teachers. Educators must be optimistic enough to believe in the great capacity of such teachers to improve. In fact, there is no option about meeting that demand. The capacity of children to improve through instruction is assumed in the establishment of the school. And they cannot do this to a normal degree unless their teachers themselves are growing.

Assuming the capacity of the young and the poor teachers to grow, one of the first conditions to be met in bringing about the result is for such extremely important documents as the curriculum and syllabi to provide plainly for their growth. If we take such teachers where they are, and immediately direct them at every important turn, on the basis of mere authority, they will not even remain where they are; they will rather become less progressive and less happy from year to year. And, with several hundred teachers entering the system every year the time will soon come when the great majority will be static and discontented. That has necessarily been the tendency, so far as this curriculum and these syllabi have exerted an influence.

In short, freedom to grow, and positive aids to growth, are necessary alike for all teachers, both young and old, and poor and good. But this curriculum and these syllabi have neither allowed this freedom, nor furnished these aids; and in these facts we find at least a partial explanation for the poor quality of classroom instruction.



P. S. 101, MANHATTAN.  
Types of Scholars. Jews and Americans.



## D. Recommendations<sup>1</sup>

### 1. As to Minor Changes

A large number of minor changes are needed in the present curriculum. Many of these have already been clearly enough indicated in our discussion of the individual courses of study. Some of the more important, however, may be enumerated and more clearly explained here.

#### (a) Technical Grammar

Technical grammar should not have a place as a separate study. Its time should be given over to literature and to composition, the latter including those facts from grammar that are directly useful in securing correct oral and written expression.

#### (b) Nature Study

The course in nature study needs extensive reorganization in accordance with the suggestions made where that subject is under discussion (p. 283).

#### (c) English History

English history should not be taught as a separate subject; but those topics that are necessary for the proper comprehension of United States history should be taught, in connection with the latter.

#### (d) Arithmetic

A considerable part of the present course in arithmetic should be omitted. During the first six years, the fundamental operations—addition, subtraction, multiplication, and division of whole numbers and simple fractions—both common and decimal—should be emphasized, together with percentage and its simplest applications to interest and trade discount.

In those years the effort should be made to secure accuracy and a reasonable degree of facility. During the last two years the time devoted to arithmetic should be reduced from five forty-minute periods to not more than three forty-minute periods per week. The first object of the instruction should be to bring the pupils to the degree of efficiency in the fundamental operations proposed by Mr. Courtis.

<sup>1</sup>It must be understood that all these recommendations are regarded by us as only a safe basis of experimentation for the progressive improvement of the curriculum. Such experimentation can be effective only when the results achieved are carefully observed and appraised for a sufficient period of time. There is no other way known to us of testing the validity of such standards as we have set up, or of their efficacy in practice.

Beyond that, the time should be devoted to the applications of arithmetic, such as are needed in connection with geography, history, civics, and other subjects. The arithmetic for the higher grades has not yet fulfilled its function. Geography locates leading industries, and gives reasons for the location; history, civics, and other subjects offer other facts about such topics as the above; but, what a great railroad system really is can be understood only when one comes to understand how many men it employs, what income they receive, how long they have to work, how many are killed per year, what quantities of goods are transported, how much capital is invested, what profit the stock brings, etc. Likewise, one must know the quantities involved, in order to appreciate what a warship means, what a farmer does, what a mine is. The principal purpose of this portion of the arithmetic should be, not to teach processes, but to identify the pupil, in knowledge and interest, with his business environment; or, perhaps better, with his environment on the quantitative side; just as literature identifies him with his moral environment, and fine art with his æsthetic.

#### (e) Correlation of Studies

An extensive rearrangement of the curriculum is necessary in order to establish a fuller correlation among the studies.

#### (f) Course for the Seventh Grade

The work of the seventh year, in particular, is greatly in need of enrichment. In order to accomplish that object, most of the studies for that year need serious modification, as briefly suggested in connection with the discussion of these particular subjects under "Curriculum and Syllabi."<sup>1</sup>

### 2. Adjustment of the Curriculum to the Needs of Individual Schools

The leading question, however, concerns the uniform curriculum for all the schools. That is already a pressing question with reference to the 7th and 8th grades, inasmuch as there is much demand for the establishment of intermediate schools for children of those grades, in which different courses shall be offered.<sup>2</sup>

Take a simple situation. In a certain city there are two schools. Heretofore the officers of each school, i. e., principal and teachers, have taken the initiative in preparing its curriculum and have done most of the work. Having their eyes on the particular children concerned, each

<sup>1</sup> See also Dr. Bachman's discussion of the elementary school course of study in his report on Promotions and Non-promotions, and in his report on the Intermediate School.

<sup>2</sup> See Intermediate Schools.





P. S. 16, MANHATTAN.

Types of Scholars. Irish predominating, Americans and Italians.



group has made a course under the influence of their own experience. And, as might be expected, the curricula of the two schools are unlike in many particulars. The subject matter, being reasonably adapted to the pupils in quality and amount, and there being no necessity of keeping pace with an army of other children, little complaint about overcrowding is heard, in either school.

What would be the effects, if the two schools were required to follow the same curriculum? In a striking way, the principle of adapting subject matter to particular children would be abandoned; the individuality of the teachers would be ignored, with many evil consequences; and the way would be paved for complaints about overcrowding and the opposite.

A general misfit would appear. The following statement seems, then, to be worthy of ranking as a principle in the making of a curriculum; namely, it should be planned on the basis of the particular children to whom it is to be taught, as that basis is interpreted by those who know it best. Changes may be effected by higher authority, but the teachers and principal should take the initiative and do the main work.

The differences among the hundreds of elementary schools in New York City are much more striking than those between the two schools mentioned. Keeping this fact in mind, and also the principle just stated, we propose the gradual adoption of the following plan for this city:

The principal and teachers of a school in one of the crowded sections of the east side, assisted by the best talent among the superintendents, shall plan a curriculum for that particular school. In this way, all the inhabitants of the city might be shown what one good curriculum is. Since the upper west side contains a very different kind of population, a curriculum for a particular school there might be planned in a similar manner. Thus, a second curriculum might be secured, adapted to a particular situation. For a certain school in the Bronx, representing a third type of environment, and of pupils, a curriculum might be prepared under like conditions; and a fourth, fifth, and others might follow, according to the number of somewhat distinctive types of schools in the entire city.

With the help of these curricula principals and teachers of other schools might take the initiative in preparing curricula for their own schools. If they lacked ability, or energy, or power to coöperate with one another, or all these together, they could, at least, adopt outright one of the several types, already developed, that most nearly fitted their own condition. In that case, they would at least get a much better fit than any they now have.

On the other hand, if they possessed ability, energy, and power to coöperate, they might modify one of the curricula in a way that would adapt it more fully to their own conditions—with the very important responsibility of having to defend and, perhaps, abandon such modifications, if their District Superintendent opposed them forcibly. The re-

sult of such a plan would be that the curricula would be far more carefully fitted to the needs of pupils throughout the city, and that the teachers, exercising initiative more fully, would be more active-minded and progressive, more effective as teachers, and happier.

According to the plan that is actually followed now, one curriculum is made out, without reference to any particular school—with the hope that it will fit all, and with the knowledge that it will fit none. There are glaring misfits on every hand. In spite of the fact that nature study and home geography should vary greatly according to environment, and ought to vary more, according to the ability of the teacher, only one course is offered to all. In spite of the fact that four-fifths of the children in some schools hear only foreign language at home, while few in other schools hear anything but English, all are expected to spend approximately the same time in the study of English. And, of course, there must be overcrowding for some tens of thousands, and not enough work for other tens, while all suffer more or less.

All this would not be so bad if it did not carry another thing with it that is worse. That is, such open and utter lack of adjustment to individual conditions, in a thing so vital to the entire educational system as the curriculum, destroys the principle of adjustment to individual conditions in general; indeed, it advertises the principle of non-adjustment. Minor offenses against adaptation to particular circumstances—such as poor method might commit—seem trivial, after seeing the principle authoritatively ignored in a curriculum issued by the Board of Superintendents. If those who select the subject matter thus disregard local conditions, why should not the teacher? Then, why should not all topics be taught alike? Why should not all children be treated alike, and held for the same results? Why should there even be any individuality in the appearance of the school rooms? (Primary school rooms are strikingly distinguished from kindergarten rooms now by absence of growing plants, pets, and other home-like attractions.) Thus, the key to the excessive uniformity prevailing in the elementary schools is found in the uniform curriculum. There can never be excellent instruction here, so long as the very definition of good instruction is nullified in a thing so prominent as the curriculum.

We are keenly aware that there are many phases of this question that cannot be touched upon here. But one other consideration must be added. The assertion is sure to be heard that uniformity is necessary for administrative purposes. That depends upon what administration is for. If its object is to help secure good instruction; then it is to be condemned if it does not accomplish that end. And, provision for the individuality of pupils and teachers being one of the very standards by which the character of administration must be tested, one of the first duties of the administrators of schools is to overcome the tendency toward uniformity, rather than to establish it. And, if the proposed plan—touching the curriculum—is unsatisfactory to the superintendents of



P. S. 82, MANHATTAN.  
Types of Scholars. Bohemians.

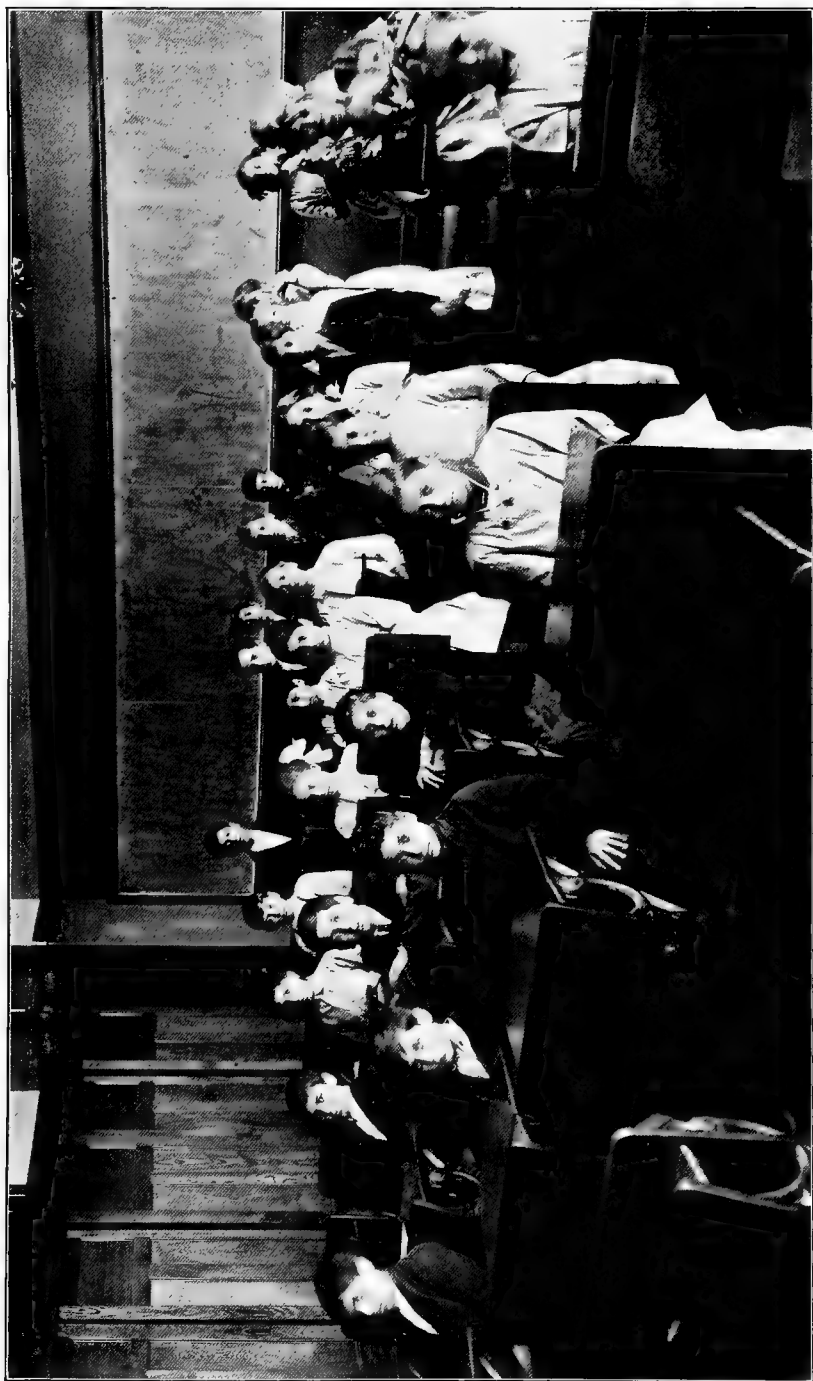




P. S. 51, MANHATTAN  
Types of Scholars. Irish and German.







P. S. 29, MANHATTAN.  
Types of Scholars. Mostly Syrians.



the city; then the task awaits them of proposing another that has the same purpose, but that is more effective.

### 3. Character of Syllabi

The syllabi, as now printed, accomplish two things in the main; i. e., they amplify the very brief statements contained in the curriculum proper; and they offer directions and suggestions to teachers about method. In brief, they inform merely.

Their purpose seems too narrowly conceived. What they thus present to teachers is in danger of lacking significance, like much of what they recommend that teachers shall present to children. It is fair to expect that leaders in a great system of education will offer their suggestions to teachers in a way that reveals how teaching is a profession, and, hence, in a way to stimulate and encourage. The information given should be subordinated to the uplift furnished.

To this end, the leading working aims and principles of instruction, that control selection of subject matter and method, should be stated. It seems reasonable to assume that, if there are persons who ought to understand, and hold the aims and principles of teaching in mind, it is those persons who are doing the teaching.

And these aims and principles should be so worded and illustrated that their direct influence on practice will be made clear; while the impossibility of there being, in most cases, one fixed and best method touching details will be established. This will involve an appeal to the teacher's judgment in selection of methods. In this way, syllabi, while giving necessary information, might surround the teacher with an atmosphere of freedom, while inspiring her by their breadth of thought.



# THE SUPERVISION BY THE PRINCIPALS

FRANK M. McMURRY

SUBDIVISION I

ELEMENTARY SCHOOLS

SECTION C



## TABLE OF CONTENTS

	Page
<b>A. Standard for Judging Quality of Supervision</b>	
Relation of principal to aims of the school . . . . .	333
His two kinds of duties, and their relation to each other . . . . .	333
Dependence of principal on his teachers . . . . .	334
Standard for judging the efficiency of a principal's supervision . . . . .	334
<b>B. Application of This Standard</b>	
Proportion of time spent in supervision . . . . .	336
Character of the supervision	
1. As learned by observation, and by interviews with principals . . . . .	336
2. As learned through reports from teachers	
a. Statements concerning individual help received . . . . .	337
b. Statements concerning conferences of teachers held by principals . . . . .	338
<b>C. Facts Indicating That These Conditions Are Representative of the City at Large</b>	
1. Prominence of administrative duties of principals and its effect . . . . .	339
2. Great size of many schools and its effect . . . . .	340
3. Lack of authority among principals and its effect	
a. Lack of authority as to lines of study . . . . .	341
b. Lack of authority as to content of each branch of study . . . . .	341
c. Lack of authority as to amount of time for each study . . . . .	341
d. Lack of authority as to method of teaching . . . . .	342
e. Diminished authority due to district superintendents and special supervisors . . . . .	343
4. The frequency and manner of the rating of teachers, and effects . . . . .	345
5. Lack of theory as to method of supervising . . . . .	349
<b>D. Conclusions in Regard to Quality of Supervision by Principals . . . . .</b>	<b>353</b>
<b>E. Recommendations in Regard to Supervision by Principals</b>	
1. On classification of principals' duties . . . . .	355
2. On size of schools . . . . .	355
3. On amount of authority to be granted to principals . . . . .	356
4. On frequency and basis of tests of teachers . . . . .	356
5. On development of a theory of supervision by principals . . . . .	356





# SUPERVISION BY PRINCIPALS OF ELEMENTARY SCHOOLS

---

## A. Standard for Judging Quality of Supervision

### Relation of Principal to Aims of the School

The principal, as the head of the school, is necessarily in pursuit of whatever aims the school itself stands for. Also the relative importance of these aims must be the same for him as for the teachers, and others identified with their accomplishment. He is merely the leader in bringing them to completion. (A somewhat detailed discussion of these aims is included in Part I of this report, treating standards for judging the quality of classroom instruction in the elementary school, p. 213f.)

### His Two Kinds of Duties, and Their Relation to Each Other

Two kinds of duties confront him from the start, whose relation to each other is of the highest significance. On the one hand, he has to look after the condition of the building, the janitor's service, supplies, and fire drills; to consult with parents and children about tardiness, truancy, other misconduct, and health of pupils; and to advise with teachers about these same things, together with the lighting of rooms, adjustment of seats, care of desks, and books. On the other hand, he is responsible for such an organization of the school as will secure a high moral tone, and for such assistance to teachers as will place the instruction on a high plane. In other words, there is a very large class of duties, that are largely mechanical, that belong to the general manager and business man, in distinction from the educator. And there is another large class, dealing with instruction and the formation of good habits, that are technical in character, calling for skill as an educator. Not all of the principal's duties fall easily in one or the other of these two groups, but in the main the distinction is valid:

Which of these two shall dominate the other, and receive the greater portion of time, is one of the first questions to consider in judging the efficiency of a principal. If he is primarily a business manager, he should be judged as such. If he is primarily a professional leader, he should be judged very differently. The purpose of the school leaves no doubt about the proper decision of this question, for it makes the business management of a school only a prerequisite to its other more important work of education. Proper attention to physical conditions, and to nu-

merous other details of general management, only secures the conditions on which effective instruction and government depend; and it is, therefore, merely a means for which the latter are the ends. This being true, a principal of a school must be closely identified with instruction; and he must be judged, primarily, as a leader in that field; i. e., as a supervisor of instruction.

### **Dependence of Principal on His Teachers**

With a large school under his control, the principal can accomplish comparatively little alone. In organizing the school, so that the active interest of children is enlisted in favor of good order and uplifting conditions, he is directly dependent upon his teachers; and, in presenting ideas so that they shall exert a strong influence on pupils, he must, likewise, work almost entirely through his teachers. His main relationship, as an educational leader, therefore, is to his teachers, and the influence that he exerts upon them, in kind and degree, is the chief measure of his worth to the school.

### **Standard for Judging the Efficiency of a Principal's Supervision**

The leading factors in effective classroom instruction have already been enumerated (pp. 211-213). According to that enumeration, one of the great duties of the teacher is to inspire her pupils to desire to be and do specific things that are worth while. Of course, a vital condition under which this can be accomplished is that the teacher herself be filled with purpose. She must hold the ultimate objects of her instruction in mind continually, and must comprehend the specific purposes of large topics that she is presenting, as well as their relation to those aims that are more distant. Her own enthusiasm and her insight into the relation of the curriculum to active living will greatly affect her influence on the motives of her pupils. One great function of the principal, therefore, is to contribute to her enthusiasm, and to this insight.

We have seen that the teacher should accustom pupils to a careful organization of ideas, for the sake of clearness and force. Of course, her own ideas should exhibit these qualities plainly, in the field of both subject matter and method. This is, by no means, easy; and, therefore, a second duty of the principal is to aid her actively in this whole matter, showing her often how she has failed to secure good organization, and how the failure might have been avoided.

A third task of the classroom teacher is to lead children to weigh the relative values of facts, until considerations of value become as prominent in their intellectual work as in the business world. Of course, the teacher must be constantly alive to varying worths, herself, in order to accomplish this object. Otherwise, she will overlook the whole matter.

A third responsibility of the principal, therefore, is to instill in the

teacher the conviction that he is ever on the lookout for this quality, in his observation of her instruction, and to advise with her frequently about methods of improvement in this direction.

Finally, the teacher is responsible for inculcating a spirit of independence among her pupils, so that they will subordinate the subject matter of instruction to themselves; so that they will think their own thoughts, in their own way; so that they will take the initiative often, and practice self-reliance in other ways also. The teacher cannot do this, cannot secure self-expression, unless she, herself, is practicing it; unless she is clearly conscious of her own freedom to say and do what she sincerely believes in. It is the duty of the principal, therefore, to surround the teacher with such an atmosphere as will encourage her to think her own thoughts, and to express them frankly, i. e., to be her normal self; also to impress upon her that he is ever watchful of her provision for self-expression among her pupils.

In brief, the principal, as a professional leader, is working for the same ends as the classroom teacher, but his pupils are the teachers themselves. His worth is to be judged, primarily, by his skill as a leader, as a teacher of teachers, just as theirs is to be judged by their skill as teachers of children. Thus, his first duty is to his teachers, to help them grow professionally.

And, in the performance of this duty, he is subject to all the principles of method to which they are subject, and should illustrate them continually in his contact with them. For that reason, he cannot be merely a judge of instruction, an inspector; for, as such, he only passes upon the quality of a teacher's work, without aiding her greatly to improve. Nor can he be a dictator, merely giving her directions about what to do; for as such he emphasizes obedience in intellectual matters, and thus puts restraint about her, while it is his duty to make her feel free. He is prevented from assuming these relations to his teachers, for the same reasons that they are prevented from assuming them toward their pupils. His general relation to his teachers, therefore, is that of an adviser, basing his advice on reason, and granting their right to reject it. This relationship is especially worthy of emphasis in a great system of schools, where uniformity in matters not pertaining to instruction is of the highest importance.

With the attitude of an adviser, he must prove helpful to his teachers by connecting the details of their classroom instruction with the aims and principles of education; to the extent that he can do this, and, according to the spirit in which he does it, he is efficient as an educational leader or supervisor.

## B. Application of This Standard

### Proportion of Time Spent in Supervision

In October, 1911, we sent a questionnaire to eighty-three elementary school principals, one of the questions touching upon the proportion of time spent by the principal on administration and on supervision. Thirty-two of the replies, taken at random from Brooklyn, Manhattan, and the Bronx, show an average of approximately two-thirds of the entire school time spent in administrative duties, as distinguished from the work of supervision.

### Character of the Supervision

#### 1. As Learned by Observation, and by Interviews with Principals

Let us now consider the character of the supervision that takes place. The principals have uniformly responded very readily to our requests for information about the principals' work. One of the requests was the privilege of accompanying the principal as he supervised, and listening to any remarks that he made, either to the teacher before her class, or to her class in her presence, or to the teacher in private after her class was dismissed. Many extremely interesting observations were thus made, and, while it should be borne in mind that there are exceptions to many of the statements immediately following, possibly to every one, the facts collected indicate the prevalence of the following four practices:

a. The amount of time spent by a principal with any one teacher, at any one time, is extremely small. For example, one principal, when asked what his plan of supervision was, replied: "I am busy with administrative matters from 9 till 10.30 a. m. Then I regularly spend one hour in supervision." "What do you do?" was asked. "I make the rounds, visiting each room." "How many rooms have you?" "Fifty-two," was the reply. Many principals thus plan to "make the rounds" every day, spending a minute or two in each room, occupying at least half of their entire time for supervision in this way.

Invariably, when the principal was asked to allow the visitor to accompany him on his tour of supervision, the principal was requested to follow his usual plan and remain as long in any one room as he ordinarily would. In this way, often five, six, and seven rooms in one school were visited. Taking all the visits together, the average time was probably not over six minutes. Very seldom did any principal care to remain longer than ten minutes with one teacher.

b. Although the principal was asked to allow the visitor to hear any remarks that he might make to any teacher, as a rule, no remarks were made. One principal stated, in starting out: "Of course, I shall

not say anything unless something is going wrong," and nothing proved to be going wrong. Almost every principal was plainly welcome in each room, as judged by the attitude of teacher and pupils, and he usually seemed in sympathy with the instruction; but silence was his rule. Of course, some, and, perhaps, much, of this quiet may have been due to the presence of a visitor.

c. Naturally, most of the remarks that were made were offered in the privacy of the principal's office. One striking characteristic of those interviews with individual teachers was, again, their shortness. They seldom lasted more than three or four minutes.

d. The final fact of interest was the content of the remarks. Most of the principals showed great tact in freeing the teachers from embarrassment. But, usually, the principal had set aside no time for special preparation for the interview; and he apparently felt no need of special study for it, since he made no request for time for reflection. What was said, therefore, touched only such matters as came at first thought; the points were, necessarily, few in number, they were introduced without much reference to organization, and they received no fundamental treatment. There was, usually, no sign that any particular question was being followed up in the various grades, or with a particular teacher. Also, the conviction seemed to be common that, on account of the large number of teachers, only a few minutes should be spent in conference with any one teacher.

## **2. As Learned Through Reports from Teachers**

Altogether, not less than one hundred teachers, representing all parts of the city, have expressed their opinion about the helpfulness of the supervision of their instruction by principals, in ways that have been of service to us. Many of these teachers have known at the time that their statements were to be used; many others have been entirely unconscious of the fact. Much care has been used to secure as extensive and representative an expression of opinion as possible.

### **a. Statements Concerning Individual Help Received**

One teacher of an 8B class, when asked to what extent he had received helpful suggestions from higher authorities, replied, "No help at all." He had been nearly thirty years in the system. Another teacher, who had been asked four or five questions by the visitor about his plan of work, when asked the further question, "How often and how long has any principal or superintendent discussed your instruction with you, either its method, or the selection of subject matter?" replied, "Practically not at all." Then he added, "You have shown more curiosity, and have quizzed me and talked with me longer than have all the principals and superintendents in my twenty-one years of experience in the New York City system."

Of fourteen teachers who were asked by one visitor "What positive help do you receive from your principal?" thirteen replied, "No definite help." One said that she had received positive help, but could give no example. Most of them expressed surprise that a question should be asked so foreign to their experience. Some stated that their principal *could* help them, if he had more time.

One teacher said, "My principal visits me, perhaps, one-half hour per term. But we have no discussion together, and he gives practically no criticisms. My former principal was more helpful; he gave model lessons." One teacher, who has been seven years in the system, stated that he had never received any real criticism from any higher officer. In one school, several teachers together agreed that, "No one ever discusses methods with us, with the view of stimulating and helping."

It is unnecessary to reproduce other replies here, since they are of the same general nature.

#### **b. Statements Concerning Conferences of Teachers Held by Principals**

Since many superintendents of schools exert, perhaps, their main influence upon their teachers through teachers' meetings, it is important, in this connection, to consider the value of such meetings held by principals.

The conferences to which teachers are called, say very many teachers, are not conferences at all. They are meetings in which the principal offers a list of directions, or orders, usually about routine matters, but sometimes about the more serious aspects of instruction. On such occasions there is, usually, no general discussion—not even an attempt at discussion. Frequently, when a teacher has been asked by a visitor if she felt free to disagree with her principal, and debate a question, she has smiled and replied, "No, it would not be wise." Indeed, it is common for teachers to declare that mental independence and insubordination are considered as practically synonymous throughout the system; hence, fear of punishment by a low mark—such as a C, that very seriously checks promotion—prevents freedom of expression.

On the other hand, there are principals, here and there, who certainly have admirable plans for teachers' meetings. For example, one principal selects one of his best teachers as a grade leader in each grade. He meets this group of leaders oftener in conference than the other teachers; but all meet for real discussion frequently. Another principal has the habit of making his first approach to the discussion of a principle of education in conference with all his teachers, and he often makes it entirely apart from the work of any particular teacher, because he thinks that his older teachers—with their fixed habits and prejudices—can be more easily reached in this impersonal way.

But, in general, the teachers who have been interviewed with regard

to the nature of principals' conferences are agreed that instruction occupies a very small place in them; that discussion in them is rare, and that they depress, rather than stimulate, the teachers.

### C. Facts Indicating That These Conditions Are Representative of the City at Large

The preceding statements are the results of reports from observations and interviews with a small minority of the entire teaching force in the city. Taken alone, therefore, they cannot be regarded as sufficient basis for general conclusions, in regard to the supervision by principals. What other facts can be offered, that either tend to support these statements, or to disprove them? There are several.

#### 1. Prominence of Administrative Duties of Principals and Its Effect

The first facts bear on the prominence of administrative duties of principals. As already stated, it is probable that two-thirds of all the time and energy of principals is devoted to these duties especially. In a city growing as rapidly as Greater New York there is temptation to spend all one's efforts in this direction; and, unless one clearly distinguishes between the two kinds of work, administration and supervision, and energetically subordinates the one to the other, the temptation will not be overcome. Reports received from principals themselves (referred to on p. 336), show that some of them attempt no distinction between these two classes of duties. If, then, they do whatever at the time seems most pressing, they are almost sure to exhaust themselves in the details of administration.

But many principals who make some distinction here, and who greatly desire to identify themselves extensively with instruction, admit that it is impossible to do so, owing to the more immediate pressure of other tasks. Every principal, for example, is held directly responsible for the correctness of all reports that issue from his school. Even in signing the salary sheet, he must certify that none of the regulations, by-laws, etc., has been violated; or that all violations have been reported. He must report on the condition of the building, on heating, ventilation, cleanliness, repairs, seating, lighting, fire drills; must make out estimates of supplies needed, must see to their distribution and adjustment; must interview parents; must know absentees and follow up cases of truancy, and attend to other cases of misconduct. Besides all this, he must see to the execution of a large number of directions from higher school authorities. He must attend to all these matters and more, quite apart from those pertaining directly to instruction. Also his efficiency as a principal, he believes, is likely to be judged by his superior officers, primarily by his promptness and accuracy in regard to these

more mechanical, but tangible matters; for that reason he is almost compelled to consume his energies in things external to instruction.

## 2. Great Size of Many Schools and Its Effect

The large size of many of the schools—some having between 4,000 and 5,000 children—greatly intensifies this difficulty. The principals interviewed have expressed themselves, almost unanimously, as to the proper size; maintaining that a school should number only so many teachers as the personal acquaintance and influence of the principal can effectively reach; and the outside limit is about thirty, with 1,500 children. Many would much prefer to limit the number of children to 1,000.

This is a very serious matter; for, the larger the school, the greater the pressure on the principal to do solely administrative work. The furnishing of assistant principals, one to every twenty teachers or so, beyond twenty-eight, is by no means a remedy for this evil. One reason is that many of these assistant principals are spending most of their time in clerical or other routine work. Being assistants, under the direction of the principal, they assist him in doing the work that is most pressing upon him. There is great waste of money at this point, in allowing assistant principals to do work at two to three times the rate of pay that the work itself requires.

But a deeper reason for the failure of a plan, which assumes that assistant principals can do the work of a principal, is that active supervision of instruction is something that cannot be easily delegated. While the criticism of instruction, whether positive or negative, should be based on technical reasons, rather than on authority, it constantly involves personal relations; it often severely tests temper, as well as respect for ability. It is the most natural thing in the world for a teacher who is adversely criticized to question the fitness of an assistant to act as critic, when, if that same assistant were principal in full charge, there would be no question. A teacher, therefore, may be inclined to appeal over the head of the assistant, to the principal himself, to settle a disagreement, or, at least, to show disrespect for an assistant. This tendency necessarily makes the assistant principal very wary about offering any negative criticism, and some omit it entirely on that account. It should be remembered, too, that almost every assistant principal is looking forward to a principalship—an ambition that is laudable, but one that does not tend to eliminate friction between the principal and an assistant.

Further, the very attitude of supervisors toward education is affected by the size of a school. If a school is small enough to allow personal relations to prevail, it seems reasonable to strive toward recognition of the individuality of both teachers and pupils. But let the number of pupils rise into thousands and it begins to seem hopeless to try to make provision for the individual qualities of anybody. The larger the school,

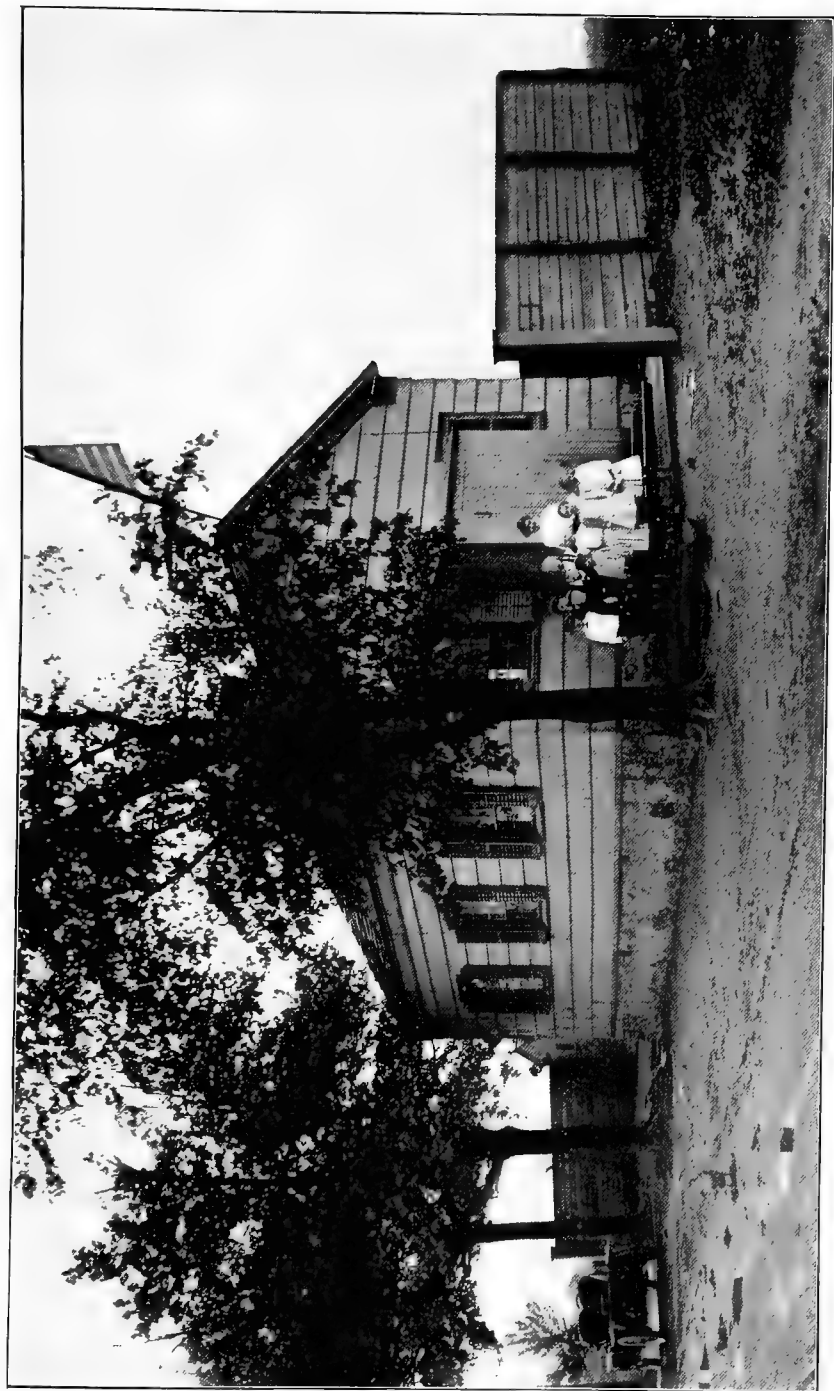




P. S. 171, BROOKLYN.

Recently Completed School of Latest Construction in the Borough of Brooklyn.





P. S. 121, BROOKLYN.  
The Smallest School in the City of New York.



the more nearly the factory spirit is approached. The absolute necessity of mass action in all external matters is self-evident; and that spirit is carried over directly into the instruction itself. Thus, the very ideals of supervisors—both as to the characteristics of good instruction, and as to what they themselves shall stand for with their teachers—are seriously affected by the size of the schools.

In brief, supervision of instruction in the smaller schools is largely crowded out by administrative duties; but, in the larger schools, supervision is necessarily even less efficient.

### **3. Lack of Authority Among Principals and Its Effect**

Remembering that much less than half of the time and energy of principals goes to supervision, nominally the main thing, let us consider the degree of freedom that the principal enjoys to do what he believes to be needed in his school, as far as he has time.

#### **a. Lack of Authority as to Lines of Study**

The separate lines of work, called studies, that are pursued in each grade, are determined by the Board of Superintendents. Aside from one slight option in the eighth grade, the principal has no authority in this matter.

#### **b. Lack of Authority as to Content of Each Branch of Study**

What the subject matter shall be, in each subject, is also determined for him. Section 40 (paragraph 8), of the by-laws of the Board of Education, declares that, "The Board of Superintendents shall, from time to time, issue syllabuses in the various branches taught, which shall be regarded as the minimum amount of work required in such branches." At the beginning of the course in mathematics is the statement that "Both the course of study and the syllabus provide for minimum requirements"; and, while most of the other courses and syllabi contain no such specific statement; and, while some of the branches, beyond question, contain too much subject matter to be followed closely, the general understanding, as stated to us both by principals and teachers, is that the above by-law is to be obeyed as nearly as possible. In other words, the principal has practically no authority as to the content of the various subjects in the curriculum.

#### **c. Lack of Authority as to Amount of Time for Each Study**

The number of minutes per week to be devoted to each subject of study is also largely fixed for the principal by the Board of Superintendents. Where there is likely to be some doubt about how the time should

be divided, in case a subject is not taught every day, even the exact length of each period of recitation is also fixed. For example, in the seventh year there are 120 minutes per week allowed for geography, and this must be divided into *three* periods. Some of the superintendents have stated that the principal is given great freedom in time allotment for studies, owing to the number of minutes per week set aside for "study and unassigned time." There is such a provision, and the maximum amount per week of such time, for any one grade, is 235 minutes in the seventh year. But, in all grades above the third, thirty minutes of this time per day, or 150 per week, is set aside by the superintendents for study of such subjects as require preparation. That leaves 85 minutes per week, or 17 per day, as the maximum amount in these five grades that can freely be assigned by the principal. The amount allowed in the first three grades ranges from 35 to 42 minutes per day. Thus, it is seen that the principal is given only a slight degree of freedom in allotting time to the several branches of study.

#### **d. Lack of Authority as to Method of Teaching**

The two topics dealt with in the various syllabi are subject matter and method, the latter occupying, probably, somewhat more than half the space.

In treating of method, for the benefit of teachers, one feasible plan is to state those aims and principles that most directly influence method, and then to show their influence by means of illustrations. In this way the controlling factors in the presentation of ideas are made clear, while the teachers are left entirely free as to details. There is little suggestion of this kind of procedure in the New York City syllabi.

Another plan, that still allows much freedom, is to omit reference to aims and principles, but to present several ways of treating a topic, from among which teachers may choose what most appeals to them. In this way teachers are likely to get glimpses of controlling aims and principles, even though these are not definitely stated; and they receive some guidance, while left free from narrow restraint. That is not the plan followed in the New York City syllabi.

A third plan is to omit reference to aims and principles, and to offer only one way of presenting a topic, with the strong suggestion that that way be followed. That fails utterly to dignify teaching, to be sure, and limits the teachers very narrowly. But that is the plan essentially followed throughout the New York City syllabi.

One important standard for judging excellence in the method of teaching a topic is found in the extent to which the presentation is affected by the particular conditions in a given class. Yet, such a standard in these syllabi is conspicuously absent. In providing the same curriculum for all schools of the city, practically without suggestion of variation, according to particular conditions, the school authorities have aban-

done all idea of adaptation to individual circumstances, as far as they well could. In the syllabi dealing with method the same spirit is in control; for there is a strikingly prevalent desire shown there to have particular topics taught the same way in all the schools. For example, there is a general plan, consisting of three steps, "for the appreciative reading of a masterpiece" in literature; another plan, consisting of three steps, in composition, "for a study of a specimen of narration, description, exposition, and familiar letters selected from literature"; another plan, consisting of eight steps, in geography, for "studying a country"; and another, in arithmetic, consisting of eight steps, for "learning the combinations of each table." Why there should be this uniformity is not discussed; but that the desire for it is strong is evident.

It should be remembered that these plans are only "suggested," not required, in the syllabi, and the idea that particular procedures are "required" is distinctly disclaimed in some places. But, in the majority of cases where specific directions are given, the word *should* is used; for example, in history, in the 6th and 7th years, the syllabi state that, "no notes should be dictated by the teacher, nor should home study be required of pupils." In a few places, too, in the midst of such directions, a given method is declared to be "optional," which makes one question the optional character of the others.

The degree of restraint placed upon teachers by these specific directions depends upon how seriously the teachers interpret them. The testimony of principals and teachers, and our own observation, justify the assertion that the teachers, as a body, have learned to take them quite seriously. It is evident, therefore, that in the field of method, as well as in adaptations of the curriculum, the efforts of principals are forestalled by the syllabi. The main points in method are already determined for them when they take charge of their schools.

#### **e. Diminished Authority Due to District Superintendents and Special Supervisors**

Diminished authority among principals, owing to the relation that District Superintendents bear to them, is another matter of importance. First of all, it should be remembered that the District Superintendent rates the principals under him each year, and that such rating is an influential factor in the principal's promotion in position and salary. The principal is, thus, directly subject to the District Superintendent.

Meanwhile, the District Superintendent is directly related to the teachers themselves. He is required to rate them, also, each year, and his rating is a very influential factor in their promotion. He does not necessarily reach the teachers through the principals; in fact, he very often dictates to them about method directly. In addition, when teachers are dissatisfied with a principal's ruling, they can appeal over the principal's head to the District Superintendent.

The effect of this situation upon the teachers is very definite; i. e., they are inclined to look to the District Superintendent, rather than to the principal, as their head, so that the real center of gravity of the school is placed entirely outside of the school itself.

For example, here and there principals are found who do not believe in having teachers keep Plan and Progress books, i. e., plans of work, and records of work accomplished. But, if a given District Superintendent requires them, they must be kept by the teachers. Again, here and there are principals who are opposed to one fixed plan of teaching all countries in geography, or all classic selections in literature. But, if the District Superintendent is known to expect such plans, the teachers feel the necessity of obeying. In that case, also, the principal may also yield, for one of his duties is to protect his teachers against the mark, C, from the District Superintendent. Occasionally, a principal has admitted that he helps his teachers, as far as he can—against his own convictions of what is sound—to prepare the children for the exact kind of test that the District Superintendent is known to give. During the time not required for that, he attempts a very different kind of work with his teachers, in accordance with his own ideas. Thus the syllabi touching method are seen to be binding on principals, as well as on teachers.

The requirements of the District Superintendent are by no means confined to the statements in the syllabi. The occasional conferences that the District Superintendents hold, whether of principals or teachers, occupy the time mainly with directions about routine matters, or with the more mechanical phases of instruction. But even when the vital factors of instruction are treated, the Superintendent's method is usually the same, i. e., desired changes are dictated, that presuppose obedience on the part of all concerned, rather than scrutiny and discussion. Thus it is seen that not only is there a lack of real educational leadership on the part of the District Superintendents, but an influence is exerted by them that seriously limits the freedom of the principals.

The principal's helplessness is, perhaps, most evident in his relation to special supervisors. In a certain third grade the regular teacher was holding a recitation in music, in which the entire time was occupied with drill upon certain notes. When asked why she so emphasized the technique, she replied that she did not believe in it, but that there were twenty cards with notes that the pupils were expected to master in her grade, and that this work consumed all the time. Later, the principal, in talking over the music, likewise opposed the plan, but stated that he was powerless to modify it. So here was a situation in which the principal and the regular class teacher, who were primarily responsible for the welfare of those children, were following a plan to which both were opposed. That is not unusual. It would seem reasonable that a principal, as the head of a school, and as the representative of the principles of general method, would be given an active voice in the control of the



method of each subject taught in his school. This is especially important, when we recall the well-known fact that persons specializing in particular subjects so often have little acquaintance with the broader aspects of education, and, on that account, overlook many of the larger principles that should govern their own work.

One would think that the principals of the elementary schools, approximately 500 in number, could, by combining, exert a powerful influence upon their own status and the entire educational situation. But there is no established avenue of approach to the school authorities that are over them. In their meetings, from time to time, they have reached conclusions and sent in recommendations to these higher authorities, but usually without result, and very often without recognition. This has happened so often that, in a recent meeting of principals, consisting of sixty to seventy-five persons, the following statement was agreed to almost unanimously as representing their view, touching their relation to the authorities over them:

"The impression has been created among principals that individual principals, who have been so fortunate as to seem to have done some notably effective work, might hope for recognition or even consultation; but that any body of opinion formed at a conference of principals is not to be encouraged."

On account of the power of the District Superintendent over the school, some of the principals assert outright that, instead of being the primary authority in their schools, they are merely agents of the District Superintendents; and many of the principals feel a very serious lack of freedom on account of this influence.

#### 4. The Frequency and Manner of the Rating of the Teachers, and Effects

One of the by-laws of the Board of Education (section 41, paragraph 10) requires that the District Superintendent rate every teacher in his district at least once per year. This rating forms a very important part of the basis for judging the excellence of a teacher and, consequently, her right to promotion. Since a District Superintendent, on the average, has charge of about 700 teachers, it is evident that he must spend a large part of his time merely in *judging* teachers; he becomes, thereby, an inspector rather than a supervisor, trying to discover what is, rather than endeavoring to improve it. Ordinarily, there is no understanding that he visits teachers in order to help them. It is very common to hear teachers say that they have never known of a case where a District Superintendent talked over a teacher's instruction with her, in order to help her. And, since he can spend only a few minutes with any one teacher, the impression that he receives in that short time becomes a matter of great moment. Commonly, when he enters a building, word of his arrival is passed rapidly about, and the one absolute requirement, as the teachers state it, is that the recitation shall go "dead

smooth" in his presence. The reason for rehearsing these facts here is to show that the prominence thus given to the rating of teachers tends strongly to focus the attention of the entire staff of teachers upon it, so that it is difficult for the principal to interest them actively in phases of instruction not concerned with such rating.

Next, observe the basis of the rating.

Each teacher is supposedly marked for renewal of license on a list of seventeen points, which, on that account, exert a marked influence on the quality of instruction; the list used for later promotion of teachers is almost exactly the same, with a few additional points.

The seventeen points are as follows:

1. Ability to comprehend instructions.
2. Ability to cooperate with other teachers.
3. Skill in blackboard work.
4. Skill in questioning.
5. Skill in presentation.
6. Use of objective illustration.
7. Power to interest.
8. Thoroughness of drill.
9. Self-control and manners.
10. Use of English language.
11. Use of voice.
12. Attendance.
13. Punctuality.
14. Personal tidiness.
15. Accuracy in keeping records and making reports.
16. Control of class.
17. Energy and success in self-improvement.

The first important fact about this list is the things that it does *not* include. For example, if a teacher has established a close personal relation with her pupils, that merit finds no direct recognition in this list. If she is working with them individually, to an unusual degree, or is especially successful in developing their self-reliance, or is distributing the work unusually well among them, or is leading them to appreciate the relative values of facts carefully; or, if she is herself organizing the subject matter with care, or showing rare originality or enthusiasm, no one of these points has a definite place in this list. To excel in these respects, therefore, does not plainly count, while excellence on the listed points does count. Naturally, then, since all teachers must be marked on the same basis, it becomes advisable for them to follow the list closely. The important fact again, concerning supervision, is that this list largely determines the prevailing characteristics of instruction, whether the principal so desires or not.

Here, then, is a plan according to which a marking system is made

very prominent, and the basis on which marks are given is made extremely narrow. The effect upon supervision by the principal is that he must sympathize with the teachers in their attention to these tests—or be out of touch with them—and, with his eye on this list of points for marking, he must limit his efforts, largely, to its scope.

Yet, the greatest evil in the general plan is hardly the excessive prominence of tests—although one must ask why they should be so prominent, when they certainly are not a help to teachers, and a large portion of the teachers, in many a school, in a given year are not in line for renewal of license, or for promotion, during that year.

Nor is the principal evil found in the fact that the list of points, on which teachers are marked, is merely incomplete. A list could never be made to include all elements of good instruction, unless it became so long that it would cease entirely to be usable.

The most serious evil—because most fundamental—is the general point of view toward education, that is shown in this list. In the first place, there is the assumption here that the value of instruction should be judged on the basis of the elements that immediately compose it.

Educators get a hint of the inadequacy of this plan by their experience in filling out recommendation blanks from teachers' agencies. Striking facts about the performance of that task are the rapidity and thoughtlessness with which it is usually done and the worthlessness of the statements made.

But instruction cannot be safely judged on the basis of the factors that compose it. We judge of a house by considering the purposes for which it was built. We judge of a machine in the same way, and even of an oration. Instruction should be rated in a similar manner. As stated in the discussion of standards for judging the quality of teaching (p. 213), the main purposes to be accomplished must form the standards by which its excellence shall be determined. The purposes suggested in that connection were: (1) the cultivation of ambitions, purposes, or motives on the part of children; (2) the organization of subject matter; (3) the weighing of relative values among facts; (4) and, finally, the exercise of initiative or self-reliance on their part.

A hasty perusal shows how completely this list of seventeen points fails to suggest any of the purposes of teaching. The defect, then, is not that the list is incomplete, but that such elements of instruction are not the principal things to observe. A detailed list might occasionally be used by a supervisor for reference, simply to make sure that he was not entirely overlooking some of the minor things in teaching; but that is probably as far as its value reaches.

The queries suggested in this list can be easily and, perhaps, correctly answered by a supervisor with almost no study. And even though the answers be correct, the main features of the recitation, whether good or bad, may still have been ignored. The explanation is that the things that decide the quality of instruction are found in the relation that *its*

*elements bear to its purposes*; and we may see its elements clearly without considering this relationship, just as one may clearly understand the meaning of every sentence in a paragraph without grasping its central thought.

Thirty years ago, certain teachers of geography in a western state took great pride in their board work in geography; in the drawing of a continent, for example, location was accurately determined by numerous parallels of latitude, and by meridians; the coast line was made very heavy by rolling the chalk on its sharp edge against the board, and then the coast was shaded, by at least a dozen carefully drawn lines. It was excellent board work, one map often requiring several hours. In fact, it was too good; and, in one case, the Board of Trustees forbade the practice, on the ground that the purposes of the instruction did not warrant so much work of that sort. The teachers had become so absorbed in the details, that they had forgotten what the details were for. The writer calls to mind a certain recitation that was rated as admirable by a number of experienced superintendents, until they turned their attention from the teacher's manner, and from the details of the process, to the *objects* that it was supposed to accomplish. Then it was discovered that it had not accomplished the purposes of a literature recitation, and, also, that it had not accomplished those of a recitation in reading, although it had avowedly been a recitation in one or the other. It was, accordingly, finally judged a failure. The same thing happens with many a recitation that seems good in its details. Similarly, some recitations, that seem poor in their elements, are found to be excellent, when judged in the light of their principal purposes.

The very ease with which this New York City blank can be filled out should make one suspicious of its worth. The judging of instruction is not so mechanical a task, nor so simple. One must approach a recitation with the main objects in mind that the recitation is to accomplish, and ever hold them in mind; that is the first requisite; then one must trace the connection between the means adopted and these ends. That is a task that varies greatly with each study and with almost every new recitation, and one that almost always requires careful study.

This New York City list, therefore, has an injurious effect on the supervision of the elementary schools, because it influences the principal—who must assist the District Superintendent in evaluating instruction—to judge the worth of teaching, without reference to the standards that determine worth; and, by keeping this up, he becomes so occupied with the details of instruction that he loses sight of the very purposes of instruction, and of the school, as a whole. One of the striking facts about the elementary schools here is the disregard of the higher aims of instruction. Also, any principal or superintendent who spends much of his time marking teachers on the basis of such a detailed list—not hav-

ing approached his task in a way that compels him to think deeply—will become less thoughtful every year, until he will cease to be a leader.

There is another peculiarity of this list that is almost as serious as its superficiality; and that is its strong suggestion that instruction is to be judged almost solely in terms of what the teacher does. It is the *teacher's* self-control and manners; the *teacher's* skill in blackboard work; the *teacher's* use of English; the *teacher's* personal tidiness; the *teacher's* power, accuracy, etc., etc., that shall be considered. Now, why should the teacher thus be the whole object of attention? If the children's conduct is the thing we are after, why should not that be the primary object of consideration in class? In other words, instruction in the main should be judged in terms, not of what the teacher does, but of what the child does. The principal standard for judging instruction, therefore, should consist of an enumeration of its few leading purposes; and these should be expressed in terms of the pupil's activity. It is the *children's* motives that we are primarily interested in; the *children's* organization of ideas, their weighing of values, and their exercise of initiative.

Here, then, is the situation in these elementary schools. Independently of the principal the rating of his teachers is made very prominent. The basis of this rating directs the attention of all concerned away from the aims of instruction to its details alone; and it is stated in terms of the teacher's activity, not of the pupil's. If a high-minded progressive principal takes charge of a school, determined to improve his teachers, he has the task of focusing their attention away from these examinations; away from the details of this list, to the high objects of teaching, and away from their own activity to that of their pupils'. Here is a partial explanation of the fact that instruction in the city is on so low a plane. (See page 253.)

### 5. Lack of Theory as to Method of Supervising

An additional point throwing light on the efficiency of supervision by principals is found in the extent to which the theory of supervision appears to be developed among them. But it should be remembered that, if there is a lack of such theory, they are no worse off than most principals elsewhere, since there is little literature bearing on the subject. Going directly to the root of the matter—if the principals as a body were asked the question, "What plan have you for the preservation and development of the individuality of your teachers, so that they in turn can the better preserve and develop the individuality of their pupils?" a very great majority of them—so far as the observations of the visitors allow a conclusion—would have practically no answer.

The use of model teaching by principals has already been mentioned on page 338; and further improvement of teachers by a principal is usually based on observation of their teaching. The little use made of

such observation as a source of valuable material for conferences with the entire corps of teachers has already been referred to (page 337). Yet it should be remembered that the want of well-developed plans in this respect is not altogether chargeable against the principals themselves. Administrative detail is ever pressing upon them; indeed, so much of it is communicated to them by their superior officers with the object of its being communicated to the teachers that, when principals find the teachers together, they cannot easily avoid the temptation to occupy the time with office routine.

But the possibilities of the improvement of teachers through supervision that aims at discussion of their instruction—much of it individual discussion—are great. What theory prevails among the principals in regard to that kind of supervision?

Let us first see what some of the theory might be, irrespective of actual conditions.

There is one plan of observation and discussion that may, perhaps, most suitably be called *intensive*. According to it, the supervisor, impressed with the fact that thirty minutes of instruction involves a good share of all the factors that there are in teaching—just as a thirty-minute interview with a man will reveal a good share of all the factors in his character—makes the whole of a recitation his smallest unit of observation, during a good portion of his visits with teachers. And, desiring to impress his teachers with his conception of the magnitude of a single instruction period, he subjects each one that he witnesses to study, endeavoring to discover how it was related to the aims and principles of education, wherein it was strong, wherein weak, and wherein it might have been improved. Such questions can seldom be answered offhand. And, in trying to accomplish his purpose, he remembers that he is also a teacher, in this case a teacher of teachers, and therefore subject to the same general requirements of good presentation to which the teacher herself is subject in class.

In the *first* place, then, his criticism will be as adverse as the situation requires; but it must also be constructive. Earnest teachers are not seeking mere praise; they want help. And they will raise no objection to adverse criticism, if valuable constructive criticism follows.

*Second:* The criticisms offered, both adverse and constructive, are helpful largely to the extent that they are based on reasons—such as aims and principles of education—rather than on personal authority. To ignore this fact and base statements on personal opinion quickly arouses antagonism and defeats the objects aimed at.

*Third:* Since the principal is desiring to influence the teacher's conduct in class, he has chosen a most difficult task, and his ideas must be presented with all possible force. They must, therefore, be so arranged that all those bearing upon a particular point are brought together in good sequence; there must be enough of them, too, to produce a cumulative effect. And all of them, taken together, must be so ordered

that the main suggestions seem few and simple. In short, the principal's ideas must be so *organized* as to produce conviction.

*Fourth:* The lecture form of presentation is as unfitting for him as for the teachers. The teacher does not care to be lectured to; that is too unpedagogical and undemocratic. Hence, the principal should raise questions and participate in the answers through discussion.

So much for a very brief outline of the theory. This is the plan of helping teachers followed more or less closely in some of our training schools for teachers, and it is probably the most effective one there is. The objection to it is that it involves much work for the principal. But, strange to say, that is its advantage. It presupposes that the principal, by virtue of his position, must be a real student of instruction. And that is what the great mass of principals are *not*. Even if a man is thoroughly progressive at the time he takes a position as principal or superintendent, unless he adopts a plan of supervision that compels him to study instruction intently, he gradually loses what grip he originally had on real education, and becomes a general manager, though still called an educator.

This plan of supervision is not entirely unknown in New York City, but we have seen no indication that it is generally accepted even as an ideal.

There is another plan, most suitably called *extensive* in contrast with the preceding, according to which the principal takes for his unit of study not the whole recitation, but some important feature of it, such as the form of the teacher's questions, or the proper use of voice, or clear enunciation, or the fullness of responses by children. According to that plan a principal may remain with one teacher only long enough to observe her practice in this one respect; then he may talk over the observations made, under the influence of the same standards, as to his method, as in the former case. This method accords more fully with the established habit in New York City of principals moving, at short intervals, from room to room, and it seems wider in scope, as well as easier. But to the extent that it is easier it is likely to be more superficial. For constructive criticism of many of these seemingly easy single features requires the observation of the whole recitation together with much study afterward. For example, take the form of a teacher's questions. By listening only a few moments to a teacher the principal may observe that her questions are poor. But if he desires to show her what the leading half dozen questions in the teaching of a given topic should actually be, he must make a careful study of that whole topic, and one of the best helps for that is for him to hear the entire recitation as the teacher conducts it.

This plan is occasionally advocated by a principal in New York City, but it is not widely prevalent.

The theory of supervision—so far as there is one—that tends most fully to prevail can be most clearly understood by an illustration. A

principal conducted the visitor through six classes, remaining perhaps six to seven minutes in each, on the average. At the end of that time the visitor felt confused as to what could possibly have been accomplished by the principal's visits, the visitor himself having seen too little of nearly every recitation even to judge its quality, to say nothing of giving constructive criticisms upon it. But discussion greatly cleared the confusion, as was shown by the following conversation at the close: Visitor—"Is this, then, your plan? In the teaching of a topic there is a certain series of steps to go through, an established procedure to follow, and you have instructed your teachers until they understand what that series or procedure is?" Principal—"Yes, that is it exactly." Visitor—"Then by visiting a teacher only a very few minutes, you can tell whether or not she is following that series, and can consequently judge how the work is going?" Principal—"Yes, that is just it." Visitor—"What portion, perhaps, of all the instruction in your school can be judged in this way?" Principal—"Perhaps one-half of it."

A visit to one of the rooms—a third grade—in which the pupils were memorizing a poem had helped to illustrate this plan. To the visitor the young teacher had seemed to be doing reasonably well. But the principal, after perhaps two minutes of observation, appearing to be dissatisfied, himself took charge of the class and taught for ten to fifteen minutes. Afterward, when asked by the visitor why he had taken the class, he replied, in substance: "Did you not observe that the teacher was standing in the back part of the room? A teacher, when a class is memorizing, should never stand in the back part of the room except (a), (b), (c). (The writer remembers that there were three exceptions, although what they were he cannot recall.) Then did you not observe that the stanza had not been written on the blackboard? It is one of my rules that the gem to be memorized shall be placed on the board in front of the class, so that all eyes can be looking in the same direction at one time." (Each child had the poem in hand in print in his text-book at the time.) The principal on taking charge of the class had immediately placed himself in front of it, had asked the teacher to write the stanza on the board, and had then proceeded through six to seven more "steps," which could be included here did they not take up too much space. A typewritten copy of the entire procedure—the same as had been furnished to the teachers—was handed to the visitor before his leaving the building.

Here, then, is a theory of supervision according to which all teachers, after having been instructed to teach a given topic in the same way, are tested by the principals' visits as to their faithfulness in following that method.

While no one theory of supervision can be said to be general in New York City, and while the writer has not personally discovered a large number of principals devoted to this plan, there are reasons for believing it to be the most generally accepted plan in the city.



One of these reasons is that the syllabi, issued by the Board of Superintendents, who determine the controlling educational theories for the entire system to a remarkable degree, hold out, as already stated (page 320), such uniformity of method as a duty. A second reason is that the District Superintendents, if not unanimously in favor of such uniformity, still individually not only support these recommendations of the syllabi by insisting upon them in practice, but they also add others of the same kind to them freely. A third reason is that great numbers of teachers assert that obedience on their part is their prime virtue in the eyes of their superior officers; and the fact that "ability to comprehend instructions"—which, according to the teachers, includes "willingness to obey," between the lines—heads the list of points on which their success is rated, and their salaries determined, lends color to this assertion.

In brief, uniformity—of curriculum, and also of method—is at a great premium in New York City. And, in consequence, it is natural to expect to find the theory of supervision by principals based on that idea.

The extent to which this plan really helps the teacher to give expression to her own individuality and thus improve her in a fundamental way needs no extensive discussion.

Neither the voluntary reports sent by the principals to the Board of Superintendents in the last five years nor the reports called for by that Board in that time show concern about either the theory or practice of supervision of instruction in the city.

### D. Conclusions in Regard to Quality of Supervision by Principals

While the main effort of a principal of a school should be directed to the improvement of the instruction, the main efforts of principals in New York City are directed to other matters than instruction. Most of the principals themselves readily admit this.

Assuming that principals, in the time that they do devote to the supervision of instruction, are under obligations to improve teachers in their instruction, we have found, through observation of principals and interviews with them, that generally they are in the habit of spending very few minutes at any one time with any one teacher; that, as a rule, no remarks are made to the teacher about the work observed; and that what remarks are made are extremely brief, unstudied, unorganized, and little related to the aims and principles of education; and therefore that the principals are not supervising in a way that shows them to be real students of instruction, or that greatly aids the teachers.

Through interviews with teachers we have found that they very commonly deny having received positive aid in instruction from their principals, either separately or collectively, and there is a strong tendency for them to deny also that freedom of discussion is allowed them.

The details on which these conclusions have been based have been

verified by a study of several factors that necessarily greatly influence the extent and quality of supervision by principals. There are five of these factors.

The *first* pertains to the prominence of administrative duties. It has been found that little distinction has been made in practice between these duties and the supervising duties of principals, so that principals might be on their guard against subordinating the latter to the former. Also, that, even if they were thus put on their guard, the number of administrative duties is at present so great that it is next to impossible not to allow them to consume most of the principal's time.

*Second*, the great size of many of the schools makes the situation worse than it would otherwise be. In the larger schools the pressure upon the principal to confine himself to administration of business matters is greater than ever, while supervision by assistant principals is necessarily less effective than that by principals.

*Third*, so little authority is allowed to principals in regard to curriculum, time allotment for each study, and method of teaching, owing to the authoritative way in which these matters are presented in the printed curriculum and syllabi, that an able principal is even restrained from adapting the instruction to his particular pupils.

The principal is further hampered by the fact that there is a decided tendency to regard the District Superintendent, rather than the principal, as the really active head of each school, while the principal is even more plainly a subordinate to the supervisors of the special subjects, so far as those subjects are concerned.

Finally, the principals bear no relation to their superior officers that allows them to make recommendations to these officers to which the latter are under obligations to reply.

On account of these conditions the lack of authority among principals seriously interferes with their efficiency.

*Fourth*, the frequency with which teachers must be rated makes examinations of them unnecessarily prominent; the basis on which the rating is made is of such a character that it necessarily directs the attention of teachers to the details of instruction rather than to its purposes, and to the teachers themselves rather than to the children; and the share that the principal must take in this rating tends to unfit him for broad educational leadership.

*Fifth*. There is a serious lack of theory among the principals as to how the work of supervising instruction should be undertaken; the theory that seems most to prevail is that based on the idea that the degree of uniformity secured is one important measure of the excellence attained; and there is little study of the method of supervising, although it is the most important work of the principal.

Each one of these five facts—namely, the overemphasis of administrative duties; the great size of many of the schools; the want of authority among principals; the prominence of examinations of teachers, to-

gether with the poor basis on which they are conducted; and the lack of theory as to method of supervising—each one of these is a factor that seriously influences the quality of supervision by the principals, and each one of them tends to prevent excellence in this field. Thus all five tend strongly to verify the impression previously reached in regard to the character of supervision by principals, obtained by observation of principals engaged in supervising, and by consultation with both principals and teachers.

Attention may well be called, again, to the fact that there are numerous exceptions to almost every one of these general statements. All that has been attempted has been to discover what ideas and practices most generally prevail, and to set them forth. There is a considerable number of principals in the city who are either not oppressed by these obstacles, or to whom, at least, they are not insurmountable, and they are performing the work of supervision in a very effective manner. But to overcome or ignore these restraints involves personal risk on their part, and requires an extra degree of ability, independence, and energy. The majority of principals are not seriously to blame if they fail to show these qualities. It is the duty of the higher school authorities to establish conditions highly *favorable* to proper supervision by principals, rather than those positively inimical to it.

### **E. Recommendations in Regard to Supervision by Principals**

In view of the foregoing considerations we make the following recommendations:

#### **1. On Classification of Principals' Duties**

The manifold duties of principals should be classified into three groups: (1) those that are purely clerical; (2) those that concern instruction more or less, but that largely concern routine, and, therefore, require little special ability; (3) those that require the technical ability of the educational specialist. Such classification having been effected, the simpler tasks in (1) and (2) should be assigned to minor officials in such a way that the principal has very little responsibility in regard to them. Then a very definite understanding should be reached that the principal shall identify himself primarily with the duties listed in Group (3).

#### **2. On Size of Schools**

The present tendency to increase the size of schools—there are now nearly one hundred teachers in some of the elementary schools—should be positively checked, and a desirable size should be agreed upon for the future, possibly not exceeding approximately thirty teachers. Also,

some of the large schools should—when the arrangement of the building permits—be divided into separate schools entirely.

### 3. On Amount of Authority to Be Granted to Principals

The principal should be made the real, not merely the nominal, head of his school. To this end he and his teachers should take the initiative in making the curriculum in all subjects for their school. The syllabi should discuss methods in a way that will in no sense tend to tie his hands, or those of his teachers.

Also, a definite avenue of approach to his superior officers should be established, so that recommendations that express the consensus of opinion of principals and that are forwarded to these officers shall command careful consideration and full reply within reasonable time.

### 4. On Frequency and Basis of Tests of Teachers

The frequency with which teachers are now rated should be reduced, and the basis on which the rating takes place should be radically modified.

### 5. On Development of a Theory of Supervision by Principals

The idea should be established that a school is good to the extent that its individual conditions are met, not to the extent that its plan of procedure duplicates that of other schools. With this idea established, principals should be held responsible for developing a theory of supervision, and its content should be revealed (a) to teachers, by the effective manner in which they are aided through its means; and (b) to the superior school officials, by reports on this subject.

## UNGRADED CLASSES



REPORT ON  
EDUCATIONAL ASPECTS OF THE  
PUBLIC SCHOOL SYSTEM

OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY  
OF THE BOARD OF ESTIMATE  
AND APPORTIONMENT

PART II

*Subdivision I*

*Elementary Schools*

SECTION E.—UNGRADED CLASSES

BY

DR. HENRY H. GODDARD

Director, Department of Psychological Research, New Jersey Training School  
for Feeble Minded Boys and Girls, Vineland, N. J.

CITY OF NEW YORK  
1911-1912





## UNGRADED CLASSES

### I. Conditions Found

In the year 1900 the first ungraded class was started in Public School No. 1, Manhattan. In 1906 there were fourteen classes in Greater New York. Since that time the enormous growth of these classes is in itself sufficient indication of the size of the problem and the reason for many shortcomings.

In 1906 a special inspector of ungraded classes was appointed. The duties of this inspector were to superintend the establishment of these classes, to secure teachers and decide what children should be placed in the classes, together with general oversight and direction of the work. Beginning, as we have said, with fourteen classes in 1906, there were forty-one classes in 1907, sixty-one in 1908, eighty-six in 1909, one hundred and three in 1910, one hundred and twenty-six at the beginning of 1911, and at the present time (April, 1912) there are one hundred and thirty-one.

One hundred and twenty-five classes were visited. The one hundred and thirty-one classes are located in ninety-five public schools. In other words, less than one-fourth of the schools of New York have ungraded classes. As a rule there is only one class in a school. Fourteen schools, however, have two classes each, two schools have three classes each, one has four, and one school has six classes. Altogether there are nearly 2,500 children in these ungraded classes.

### How are the Children Chosen for These Classes?

Principals of schools are asked by the City Superintendent to give their "personal attention to the conspicuously backward children; to those who apparently are unable to learn to read; to those who have very deficient number sense; to those who are truants or show a tendency to the habit; to those who seem incorrigible; and to noticeably irritable, nervous children."<sup>1</sup>

The principals rely largely upon the estimate of the teachers. Had the principals and teachers carefully heeded Dr. Maxwell's circular letter a much larger proportion of defective children would have been reported.

<sup>1</sup> Elementary School Circular No. 2, September 19, 1911.

Here we meet the first great difficulty in our problem of adequately caring for the backward child. For many reasons the grade teacher is unable to properly decide the mentality of the child. In the first place, she has never received any training in this problem, and whatever she happens to know has come either through her observation or through her incidental information in regard to normal and dull children. But she has always been led to believe that dullness in children was due to their environment or their treatment; and that they would eventually outgrow it, or that by sufficient work on her own part they could be brought up to grade. In other words, she has divided her children into *idiots* and normals; the first group containing those that are obviously defective as evidenced by physical condition, appearance of stupidity, or absolute inability to comprehend anything in school. The other group includes all the rest of the children—those who are normal, those who are exceptionally bright, and those who are dull or slow.

We now know that a very large proportion of those children who are thought by the teacher merely slow, or deficient in some one subject, are really mentally deficient; and while they may, because of having a fairly good memory, make some progress in some subjects or activities, they nevertheless can never be normal children, and should really be in ungraded classes.

The second thing that interferes with the proper selection of the children is the pride of the teacher or the principal of the school. Teachers have sometimes felt that it was a confession of failure to acknowledge that a child could not be brought up to grade. Principals have been proud that their schools were reasonably free from stupid children.

Still a third reason is that mental defectiveness is often complicated with physical defect; and it is practically the universal custom to lay stress upon the physical defect, and conclude that if this were removed the child would be normal and develop properly, and that it was therefore wrong to put such a child in the ungraded class. On the other hand, conditions that are only temporary or individual idiosyncrasies are sometimes mistaken for signs of permanent mental defect, with the result that children are placed in these classes who are not defective; who are really almost normal, but have been mistaken by the teacher because she has been unable to understand them. The result of all this is that the nearly 2,500 children now in the ungraded classes, while largely feeble-minded and institution cases, nevertheless include some that are really of normal mentality and should not be in these classes, but should rather be in the progress classes—the E classes—among those children whom special attention will bring up to grade. This condition of having in the ungraded classes children whose mentality ranges from that of a three-year-old to the mentality of a normal child is very disadvantageous, and makes the work of the class unduly difficult for the teacher, and expensive for the system.

We have found, for instance, in these classes, imbeciles of mongolian

type, microcephalic idiots, hydrocephalic cases, cretins, a large number of middle and high-grade imbeciles, and also a large number of morons (defective children of the mentality of a normal child of from eight to twelve years).

These classes are officially designated as classes for mentally deficient children, and yet there is a very general effort on the part of the principals and teachers to get some of these children back into the grades. This lack of uniformity in policy is unfortunate. That little is achieved under such circumstances is shown by the results. In answer to the question, "How many of these children have you sent or will you send back to the grades?" even the teachers themselves, with all their optimism, seldom say anything better than "one or two." "In the history of the class of five years, we have sent back five to the grades." Teachers of the grades who have taken these children back sometimes reported that they ought not to have been sent back.

Whether the examiner who decided what children are to go into these classes ignores the fact that these classes are for mental defectives, or whether the normal children who get in are cases of "mistaken diagnosis" should be ascertained by the Department of Education.

### **What is Done for These Children in the Ungraded Classes?**

The usual program is the three R's in the forenoon, and some form of handwork (manual training) in the afternoon. Nearly all of the experienced teachers and the principals are agreed that this bookwork is largely wasted upon these children; but they feel compelled to try to do this because it is the tradition of the system, and because the parents insist that their children shall be taught to read and write.

Here is our second great difficulty in the problem. If some of these children can be taught reading, writing, and numbers to such an extent that they can make intelligent use of what they learn to increase their efficiency later in life, then it certainly should be done, even though it is slow and laborious. If, on the other hand, the work that they do is merely parrot work, and because of their good memories (many have them) they are able to make certain associations and able to read out of a book after they have studied it a long, long time, and can perform certain numerical operations, but are unable to apply them, and have no real understanding of what they are doing, then all of the time devoted to this is wasted, and worse. Which view is correct? Opinions are divided. Most of the people who are familiar with the feeble-minded child as he is found in institutions and in the *Hilfsschulen* of Germany and the Special Classes of London believe that the children in the ungraded classes of our city belong to the latter group; that is to say, they believe that it is wrong to attempt to teach such children any of these matters.

The only way to solve this problem is to appeal to experience. Had a careful record been kept of every child who had been in the ungraded

classes; his actual condition; what he had learned in the way of reading, writing, and counting; and then of his after history, and the extent to which he had been able to make a living because of his ability to use his knowledge of the three R's, we might, by this time, have an answer to the question. As a matter of fact, no such records have been kept. We have continually asked teachers, "What do you know about these children after they leave the ungraded class at the age of sixteen?" The answers have been almost uniformly of one kind, although couched in various forms. Frequently it is a mere shrug of the shoulders, sometimes with the remark, "That is a problem." More than one teacher has said, "They soon find their way to the Juvenile Court." Others say, "Oh, they are on the streets." Or again, "One boy got a job for a few months, but could not keep it." Another teacher said, "This boy comes to me every few months to get him a job."

As has been said, there are very few records of these children; and those that we do have, which have been secured by exceptionally zealous teachers who have watched their children after they have left school, seem to indicate that it is very rare that these children make good out of school, even though their needs are very slight. They are generally on the street, in the Juvenile Court, or are sent to some institution.

The experience with such children as these in institutions for feeble-minded, the country over, is that manual training is the one thing that they can be taught; consequently we have turned with interest to the usual afternoon program of these classes to see what is being done in this direction. Here we find two or three difficulties. In the first place, very few classes have any adequate supply of material to work upon. Some of them, indeed, have not any *equipment*. The classes that have enough wood, raffia, reed, yarn, twine, cloth, thread, needles, etc., to carry on their manual work are very few indeed. One can count on the fingers of one hand the schools that answered, "Yes, we have all the material that we need"; while the conditions in schools where they do not have enough is pathetic and even ridiculous. In some classes the only lumber they have to work with is pieces of old boxes which the children are able to bring in. In another school remnants have sometimes been begged of John Wanamaker with which they could do some of their needlework. In other schools some of the mats and rugs which they had made were, when made, unraveled and torn to pieces in order that the material could be used again! Much of the material furnished is poor or not adapted to the defective child. Many of the things needed are not on the list supplied by the Department.

Not only is this true of the material, but oftentimes the equipment is so exceedingly slow in coming as to materially handicap the work. In some schools classes have been established for nearly two years, and yet no equipment has arrived. The following letter is typical of a number of cases:

NEW YORK, March 20, 1912.

MY DEAR DR. ———:

In regard to the need of equipment in our ungraded class, about which you asked me, I find that:

The class was established in November, 1910, and I supposed that the installing of an equipment would be automatic. When it did not come, allowing for the slowness of things in general, I wrote ——— that we needed it, and waited. I wrote also to ——— on Dec. 1, 1911, and to the Board of Superintendents on Feb. 12, 1912. To none of these letters have I ever received a direct reply, so that officially I do not know that they were ever received.

I have written Miss Farrell at least four times on the matter, and have called her and the District Superintendent on the telephone several times. Last October I called on Miss Farrell at the office and mentioned the subject. Once she called me up and told me she had heard that there were three sets of apparatus on hand and that I had better speak for them. I did so immediately, but have heard nothing as yet concerning it.

Very truly yours,

——— ———.

The regular desks cannot be taken out of the room because the proper official does not get around to do it, and the equipment of tables and benches needed for these classes cannot be put in until the desks are taken out. In a number of schools where there are good equipments of tables and chairs and two or three work benches there are no tools, no hammers, or saws, or anything to work with. In one room the benches were piled on top of each other because they were useless without tools or material to work with. In one class, established last fall, the desks are so crowded that there are no aisles, and not a desk is allowed to be removed. Think of the cruelty to both teacher and pupils of having to do their work in such a room for nearly an entire school year!

Even in those classes where the equipment is complete and where there is a fair amount of material the work is seldom satisfactory. This is mainly due to two reasons. First, because the teachers are inadequately trained. As a rule, they are those who have little understanding of manual work, who know only one or two kinds, or have merely picked up a little here and there; have seen this device or that, and have been attracted by it and have put it into their daily program; and are working it with their children, but without continuity of purpose, with no sign of all the different activities working together for educational result. And secondly because, as shown above, almost all of these classes contain such a wide range of mental capacity. As has been said, they range from the low-grade imbecile to the high-grade moron, the almost normal child,

with possibly one or two that are normal. Under such conditions it is unreasonable to expect any satisfactory procedure. In a few schools very satisfactory work is being done in spite of all the handicaps. The conditions are the result of a situation which has grown rapidly and which no one adequately understands, but which can only be set straight by a careful study of the conditions and an appreciation of the situation by teachers, superintendents, supervisors, and the Board of Education, and lastly the public and the taxpayer.

### **Who Are the Teachers of the Ungraded Classes?**

Our third great difficulty in this problem is to secure teachers for these classes. It is practically impossible to obtain an adequate supply of trained teachers. There are only a few places in the entire United States where persons can get anything like an adequate training. Institutions for the feeble-minded should be the model schools for teachers that are taking training in this line of work, and these institutions very rarely train teachers other than their own; and those persons who teach in institutions for the feeble-minded are seldom willing to leave those positions for public-school positions. There are now several places where instruction on the theoretical side is given. But without actual acquaintance with feeble-minded children of all types the teacher is left as the physician would be who has gone through his medical course but has had no laboratory or hospital experience.

In the absence of such trained teachers, the next best thing has to be done. The grade teachers of three years' experience are encouraged to take the special examination for teachers of these ungraded classes. They are then transferred to those classes to work out their salvation as best they may. The difficulty here is the difficulty that we always meet when we encounter anything like a civil service examination or a fixed examination of people for these positions. No one has yet discovered any sure way of selecting the right person by means of a fixed examination. The result is that we have found certified teachers in these classes who are in no way fitted for the work. On the other hand, we have found people who are teaching as substitutes, having failed in their examination, who are nevertheless doing excellent work. It should be said that the teachers are, as a rule, faithful, conscientious, interested in their problem and very largely more or less cognizant of the problem. The most hopeful sign is that nearly all of them are painfully aware of their own lack of training and their own inability to do for the children what they feel might be done. A few teachers are utterly incompetent, and some of these are substitutes.



UNGRADED CLASS (MIXED) IN P. S. 110, MANHATTAN.

These pupils are shown holding the products of their own handwork.





### Who Supervises Ungraded Classes?

This is the next great difficulty. There is little or no supervision of these classes. The inspector of ungraded classes has other duties absolutely incumbent upon her which require so much of her time that little is left for visiting classes and helping the teachers. The inadequacy of the present plan of supervision will be realized when it is remembered that the principal of a school with no more than thirty to sixty classes is considered to have enough to do, and usually more than enough. But his classes are all under one roof. The inspector of ungraded classes has one hundred and thirty-one classes scattered all over Greater New York—some of them requiring a great deal of time to reach by the usual means of transportation. Would it not be a matter of simple economy to furnish the inspector of ungraded classes with an automobile which could take her in the least possible time to the various schools?

The principal of the school in which the class is placed has no official responsibility. It is true that in many cases these principals are so interested that they have informed themselves somewhat on the problem, and in one way or another, they have acquired a great deal of wisdom on the subject and are very helpful to their teachers. Nevertheless, this is accidental and is to the credit of the principal rather than the system. That some principals do not feel this way about it is evidenced by one who, in reply to the question, "What suggestions have you in regard to the ungraded class?" said, "I have nothing whatever to do with it. The Board of Education has a specialist who takes entire charge of this class. If you ask me about my regular grades I can tell you anything you want to know, but with the ungraded class I have nothing whatever to do." This frank statement, although unusual, is an entirely justifiable position. We have no right to expect that a principal who has from thirty to seventy-five classes in his building—from 1,000 to 3,000 children—shall also add to his responsibilities the problem of dealing effectively with the feeble-minded child and make himself an adequate supervisor of such work. That every principal who has such a class in his building ought to know enough about the problem to give the teacher free rein, and help in the matter of material, program, etc., is true. But adequate and effective supervision by the principals is more than the public has the right to ask.

The rooms in which these classes are accommodated are, like the children in the classes, of all grades from the lowest to the highest; that is to say, from small, dark, dingy, inadequate rooms up to large, light, airy, well-located—in short, the best room in the building, as several principals have proudly declared. On the whole, the rooms are good. There are a large number of excellent rooms; only a few are poor, and these are the best that could be obtained under the circumstances.

A more serious difficulty is the large number of schools that have no ungraded class. In many of these it is again a question of room. In a few schools an ungraded class is very much desired, but there is no place to accommodate it. The only way in which a room could be provided in these schools would be to put some of the normal children on part time, and this is not considered desirable.

Such are the most important facts revealed by personal visits to the ungraded classes.

## II—Suggestions Received

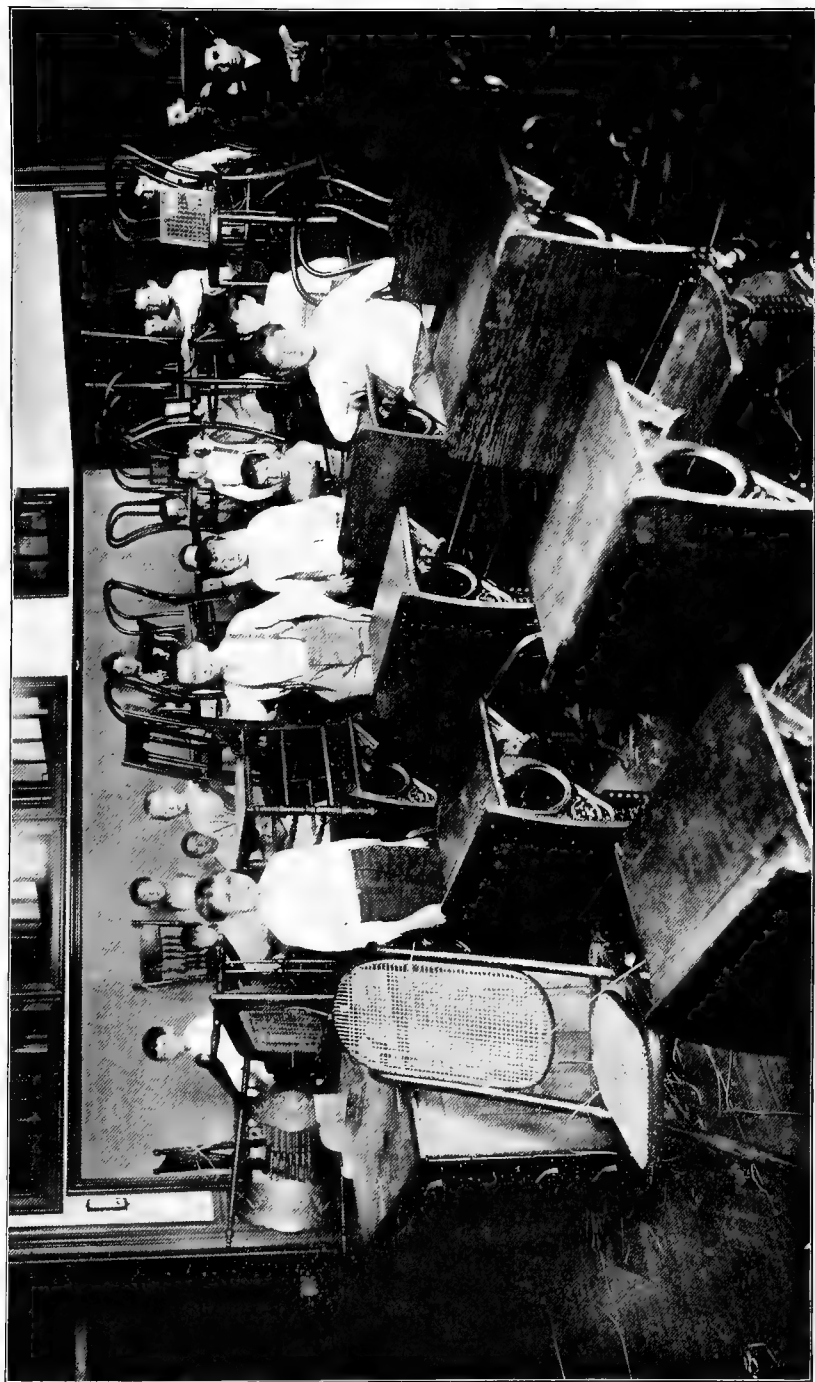
Wherever possible, teachers and principals were asked for suggestions, born of their experience, which might help to increase the efficiency of the ungraded classes. Some of these ideas were so universally held, and others were so significant, that they deserve consideration.

Nearly all concerned, both teachers and principals, feel that these children are institutional cases, that they do not belong in the public school at all, but should be cared for in institutions for the feeble-minded. But when asked the question, "How many parents would consent to these children going to institutions?" they immediately admit that there would be very few indeed, and so the question remains, "How shall they be cared for?" This we shall discuss later.

Many principals and some teachers suggested that these children should be given working papers before they have fulfilled the requirements of the present law. Their argument was this: These children can never learn the amount of reading and writing and arithmetic that is required. If they are, by dint of a great deal of drill, brought up to the point where they may somehow get past the examination, it is still a purely perfunctory achievement, and has done them no good. On the other hand, for many of these children, the very best thing is to go to work where they can be trained by their fathers or mothers or persons who are willing to take charge of them and see that they are trained to do some sort of work; and as this is the only thing that they can ever do and the best thing for them, it is folly to keep them in school a year or two after they are ready for that work. Here again the question can only be satisfactorily understood and settled by the adoption of a comprehensive plan for the solution of the whole problem.

Again teachers and principals feel almost universally that these children, although cared for by the school system, should not be in separate classes in the regular schools; but that centers or schools should be established for these children, so located that they could take all of the children who are now in these ungraded classes, and those that ought to be in them, in a given area; there, brought together in one building, they could be cared for and supervised and directed as necessity required.

Practically all principals were agreed that some more efficient and available means for giving these teachers the material they require should



UNGRADED CLASS OF BOYS. P. S. 147, MANHATTAN.

These pupils are being taught how to cane chairs. The usual program is the three R's in the forenoon and some form of handwork (manual training in the afternoon). Such handwork is done in the regular classroom for ungraded pupils.



be provided. Many state that some better method of distributing supplies should be provided for these classes so that they could have the material that they need, of the kind that they need, and when they need it; and not be compelled to spend their own money to get those things that they cannot get along without, and yet which they are not provided with by the authorities.

Practically all principals agree that some better plan for supervision should be provided. They say that it is not in their "line"; that they have not the time to devote to this special work, and consequently they are unable to offer to the teachers the help that is needed.

A few principals complain of the examinations that are required for teachers of this class, saying that excellent teachers are frequently denied a certificate and so their classes are crippled.

A considerable number also complain that children that they recommend for the classes have never been examined; and in some cases that children, whom their long experience has shown belong in the ungraded class, are returned as unfit for these classes, not being sufficiently backward to warrant their being transferred.

And, lastly, many principals say that they could select teachers from their schools that could pass the examinations and would make ideal teachers for these classes; but that the teachers are unwilling to undertake the work, feeling that it is difficult and arduous, and has many drawbacks and that there is not sufficient compensation to induce them to make the change.

All of these matters are important.

### III—Discussion

The conditions discovered and set forth in the first part of this report, together with the recommendations received from principals and teachers, agree with the theoretical view that this problem is much larger than has yet been appreciated. The most extensive study ever made of the children of an entire public-school system of two thousand has shown that 2 per cent. of such children are so mentally defective as to preclude any possibility of their ever being made normal and able to take care of themselves as adults. (See *Pedagogical Seminary* for June, 1911, "Two Thousand Children Tested by the Binet Scale"; by Henry H. Goddard.)

Since this result was obtained by the use of the Binet-Simon Measuring Scale of Intelligence, it stands or falls with the validity of the scale. A word in regard to the accuracy of said scale: The Binet-Simon Measuring Scale of Intelligence is the result of years of study by one of the ablest psychologists of modern times. The scale itself has been tested and retested on groups of children large and small. Practically the only valid criticisms that have ever been made of it have been that it might be improved in some of its details. It has

never been rejected by any one as useless. The only seriously adverse criticisms have been made either by persons who have not used the scale on more than a handful of children or who have not used it intelligently. Those persons who have used it on large numbers of children have declared that the more they use it the better satisfied they are with it. While no one claims for it that the results obtained should take precedence over all other evidence in the case of an individual child, no one has denied that it is able to give us an accurate percentage of normal, backward, and precocious children in any group. With the record that it has made, any attempt to ignore the results as shown by this method would savor strongly of prejudice.

It is indeed startling to read that 2 per cent. of school children are feeble-minded. But every new and unexpected discovery is more or less startling. And in this case the findings are not without corroboration from other sources, for those who are willing to fairly face the facts.

According to this estimate of 2 per cent. there are 15,000 feeble-minded children in the public schools of New York. The only escape from this conclusion would be the assumption that in New York City there is a better condition of things than exists in a small city and rural population in Southern New Jersey. Certainly one who is familiar with conditions in Greater New York would hardly claim that such was the case.

I have examined a number of children in the New York schools by this scale, and am entirely convinced that the 2 per cent. is well within the mark. In the short time that was available for this entire investigation it has not been possible to use the scale extensively or systematically; nevertheless, by careful samplings here and there, results have been obtained which are strikingly significant. I give these results as concisely and clearly as possible.

First, three ungraded classes were examined in toto. These three classes comprised forty-six children, of whom twenty-nine were distinctly feeble-minded, ranging from four to nine years backward. Eight more were three years backward; six were two years backward, and three were one year back. There is every reason to believe that a goodly proportion (with the possibility that all) of the fourteen who were two and three years backward will prove to be feeble-minded; for we have discovered from our study of mental defectives that there is a type of child that slows down until about the age of nine or ten, and then stops; so that many children of eleven or twelve who, by the test, are only two years backward are found to be near their stopping place, and do not develop after that. By the time they are thirteen or fourteen they reveal themselves as distinctly feeble-minded.

We tested also eighty-one children in the special or E classes. Of these, twenty-nine were feeble-minded, being from four to eight years behind; fifteen were three years behind; sixteen were two years behind; fourteen were one year backward, and seven were at age. It will be

seen that in this case more than one-third of the members of these E classes were distinctly feeble-minded. It is not probable that any such percentage holds for the total E classes. Nevertheless, the test indicates, as we would expect, that a large percentage of the pupils in the E classes are mentally defective. There are nearly 25,000 children in the special E classes.<sup>1</sup> It would be a very conservative estimate to say that not 33 per cent. but 10 per cent. of these were defective. This would give us 2,500 defective children in these classes alone.

We examined twenty-two children in the special D classes, those preparing for a working certificate. Of the twenty-two examined twenty-one were from four to eight years backward, being feeble-minded. One was three years backward, possibly not feeble-minded. These were in two schools. In one case the entire class was examined—at least all that were present that day, it being a holiday for some of the children—and the eleven present were all feeble-minded; and the teacher assured us that those who were absent were, in her opinion, much more deficient than any of those present. Likewise, in the second class, where there were twenty-seven enrolled, and eleven were examined, all were from five to eight years back, therefore feeble-minded. In this class also the teacher assured us that the worst cases had not been tested—only the doubtful ones. But ignoring that, and taking only the facts, we still have ten out of twenty-six who are feeble-minded. That is almost 40 per cent. There are in the D classes, 2,461 children.<sup>2</sup> If this proportion holds throughout the D classes of the city, we would have almost 1,000 feeble-minded children in this group alone.

In neither of these groups, the special E classes or the special D classes, is it maintained that we have a sample of the entire group of children. It is entirely possible that these classes in other sections of the city are made up quite differently and would not contain as large a percentage of defectives; nevertheless, the fact remains that in some sections they are made up of defectives, and these children should be in the ungraded classes instead of where they are.

Besides these groups we have also tested a few children from the regular grades in each of five schools, one of these schools already having an ungraded class. Of one hundred and fifteen children tested in the five schools, thirty-three were distinctly feeble-minded, and thirty more were border-line cases. These were, of course, selected cases. In each of these five schools, therefore, we have an average of twelve children that ought to be in an ungraded class, and there is no thought that we discovered all that there were in any one school. Moreover, these schools were located in the upper west side, lower west side, lower east side, Flushing, and Borough of Brooklyn, so that they are fairly representative of the city.

<sup>1</sup> Superintendent's Report, loc. cit.

<sup>2</sup> Thirteenth Annual Report of City Superintendent of Schools for year ending July 31, 1911, p. 55.

Furthermore, we examined, at the request of the teacher, in one high school, five cases that were selected by her. They all proved to be feeble-minded. Asked how feeble-minded children came to be in the high school the reply was, "They are not allowed to stay more than two years in any one grade, and so they are promoted whether they are fit or not, and in that way get into the high school."

I believe that the foregoing figures amply justify the conclusion that there are 15,000 feeble-minded children in the public schools of New York, and even make it probable that that is a conservative estimate. I should add that many a principal has assured me that he has in his regular classes more than enough children to make another ungraded class in his school, and my own observation has abundantly confirmed that statement.

From all of this I conclude that whereas there are now more than 2,000 children in the ungraded classes, and there are ungraded classes in less than one-fourth of the schools of the city, if they all had schools they would thus get 8,000 children on the present basis of selection, but the present basis of selection gets certainly not more than half of the defectives. Therefore, we have a right to double that again, which would give us more than our 15,000.

If, as said above, the proportion does not quite hold in some schools, this would be more than made up by the very high percentage of defectives in some of the other groups—the D classes and the E classes already referred to; also the C classes, those made up of non-English-speaking children. "Non-English-speaking" very often means too mentally defective to learn the language in the usual time. Many a mentally defective child is excused and claimed to be normal on the plea that he does not understand the language, the teacher forgetting that the normal child of almost any foreign nation learns our language in an amazingly short time—barring the children that hear no English except in school.

There are 1,464 children in the C classes, those who do not speak English. It is more than probable that a high percentage of these—at least much higher than that we give for the general group—are feeble-minded, and must have special instruction in the language because they are too defective to readily pick it up. In other words, this is only an illustration of what we find regularly, that a physical condition often obscures the mental defect. A child may be feeble-minded, but if he is also a foreigner we ascribe his defect to "language"; just as in adult life a man may be feeble-minded, and as a result of that a drunkard, the alcoholism always obscuring the feeble-mindedness. People say, "Yes, he is weak, but he would be all right if he did not drink."

We have another illustration, although of no great significance to our numbers: There are in the city 490 crippled children in special schools. Undoubtedly a high percentage of these are mentally defective. Also many feeble-minded children who are crippled, blind, or deaf, have





TYPES OF UNGRADED CLASS PUPILS IN THE PUBLIC SCHOOLS  
OF NEW YORK CITY.

The two girls shown in the above picture are of the same age (14 years old).



MALE TYPE OF UNGRADED CLASS PUPIL IN NEW YORK  
CITY PUBLIC SCHOOL.

The three cases were photographed in P. S. 88, Manhattan.



been shut out of the schools. The actual number of all of these should be ascertained. It is only logical to conclude that of the mentally defective children a large percentage become crippled because of their lack of sufficient intelligence to avoid ordinary dangers. This, indeed, is one of the phrases used by Tredgold to define feeble-mindedness.

Next, it must be recognized that children who are thus found to be mentally defective can never earn a living except under the most favorable conditions, and such conditions certainly do not exist in our large cities, especially New York. Therefore, this army of 15,000 children is bound to be more or less a burden upon society.

Again, careful studies have shown that this condition of mental defect is hereditary in somewhere from 65 per cent. to 90 per cent. of the cases. The studies of the children at the Vineland Training School show 65 per cent. with marked feeble-minded ancestry. Tredgold of England and the Royal Commission accept from 80 per cent. to 90 per cent. as due to a "morbid heredity."

Applying this to our problem, then, we find that from 10,000 to 12,000 or 13,000 of these children will, when they grow up and marry, produce children defective like themselves. It has further been shown that they produce children in large numbers, increasing at twice the rate of the general population.

Again we see the enormous size of the problem.

In view of these facts, what shall be done? Two solutions have been proposed for this problem. One is permanent segregation, so that they could never become parents; and the other is surgical sterilization. In the present condition of society neither of these solutions is applicable to any considerable proportion of these 15,000 children. They cannot be placed in institutions or in colonies, for the reason that their parents will not consent. They cannot be sterilized for the same reason. The great majority must live their lives in the environment in which they are born. A great majority of them will become parents, and the problem will become increasingly larger for us until such time as we are driven to take drastic measures of one form or another.

Meanwhile what can be done? First of all, a body of undisputed facts bearing on the problem should be collected. For example, I have asserted my belief that there are 15,000 mentally deficient children in the schools of New York. I have backed up that opinion by certain facts and arguments which make it imperative that the truth be ascertained. It is not enough to rest upon the opinion of someone else that such a number is preposterous. The true number may be less; it may be more. But something approaching the exact figure should be obtained.

Actual data should be accumulated as to what becomes of these children after they have left the ungraded classes, of the children in E classes, the C classes, and all others who show in their school work

that they are not perfectly normal, to the end that we may know what effect our methods are having upon these children, and to what extent we have wisely judged them and treated them.

We need a great deal more knowledge concerning the effect of the methods of sterilization, so that we may speak with assurance when it comes to the question, "Shall this person be sterilized?" and so that we can predict exactly what will be the consequences.

With a body of knowledge behind us, it will not be difficult to carry on a campaign of education looking toward the solution of the problem—not only in securing efficient and far-reaching laws for the sterilization of the unfit in a much more helpful way than any of the laws now in force, but also in showing parents that segregation in institutions is the wisest thing that can be done for their children, unless they are willing to have them sterilized, if that shall have proved a wise procedure.

In our attempt to estimate the probable size of this problem, we should not forget that the figures so far produced relate to children actually in the public schools, and that, besides these, there are many more children who are deficient. For example, there are large numbers of children not in the public schools. The investigator has been told frequently that, when children do not get along in the public schools, they are frequently taken out and sent to other schools. If this is true, it may be that the percentage of defective children in these other schools would be considerably larger than that which we have assumed for the public schools; at any rate, as high a percentage would hold. In the nature of the case, one would expect that the percentage of defectives in these schools would be high. This has been corroborated by observation in at least one such school.

Having accumulated the facts, and having sufficient knowledge of the problem, we should next work toward institutions or colonies for the segregation of these people. The question as to whether parents will allow their children to go to an institution is largely influenced by at least two factors: first, the distance of that institution from the child's home, involving the possibility of occasional visits; and, secondly, the character of the institution where the child is to be placed. The City of New York has an institution for the feeble-minded at Randall's Island. As to the character of that institution, I am not expressing an opinion; but, whatever be its real character and worth, it is unfortunately true that in the popular mind its reputation is not good. Whether their opinions are well founded or not, the fact remains that parents are opposed to sending their children to Randall's Island. They tell the most disquieting stories of the treatment that their children have received. This same attitude of the parents was also found by Dr. Moore in her study of the problem, as published by the Public Education Association.

One of the two possible solutions of the problem, What shall be done with the mentally defective child in New York? is segregation and colonization. It is, therefore, most unfortunate that the one in-

stitution which the city supports for that purpose should have such a reputation as to make this solution difficult and often impossible. It is possible to have colonies and institutions so attractive that parents are eager to have their children placed there. This has been demonstrated in many places the country over.<sup>1</sup> Until we come to the point where we decide to take these children forcibly away from their parents, whether they are willing or not, everything depends upon winning the parents' consent; and this can be done if the institutions are conducted in the right way, and if entrance to them has been made simple and pleasant. Children may be made happy and as useful as their limitations will permit. Wherever the children become trainable to such an extent that they are earning something, it might even pay the State or the city to make some return to the parents, if their plea should be that they want to take the children home because of what they can earn for them. It would be cheaper for society to pay the parents a certain amount for the work of the child, and have absolute control of the child, than to send it home, and out into the world where later it would produce more children of the same kind, or become a criminal.

Finally, all who cannot be thus taken care of, in such a way as to provide against the reproduction of the same type of children, must be made as good citizens as possible.

How can we make them as good citizens as possible?

It is well known that a happy person is a better citizen than an unhappy one. It is, therefore, perfectly logical to maintain that, if we can make these children happy, we are taking the first step toward securing the best citizenship that we can get from them.

Secondly, people are more likely to be happy when they have some occupation, something that they can do with some satisfaction to themselves. Therefore, if we can train these children so that they have some little skill, even though in only one activity, and not sufficient to enable them to earn a living, they have an occupation; and this will make them happy, and tend to keep them out of mischief and make them as little a burden upon society as possible. It would appear, therefore, that it is necessary for society to see to it that these defective children are trained to be happy and as useful as they can be made.

The next question is, Who shall do it, and how shall it be done? This question is fundamental, and must be satisfactorily answered.

It seems clear that these children are not proper candidates for such education as the public school is now able to give, and, to that extent, do not belong in the system. But the fact still remains that they must be cared for. To the extent that society understands the situation, it will certainly demand that these children be cared for and trained. Whether society will place the burden upon the public school system, or whether it will establish another agency for doing this work, remains to be seen. If the latter plan is adopted, then, of course, the public school

<sup>1</sup> E. g., Waverley, Mass.; Faribault, Minn.; Polk, Pa.

system is relieved, and the next step would be the establishment of some tribunal which would decide all doubtful cases. But, if the public continues to say that the educational system is nearer to this problem than any organization that can be brought into use, it does not necessarily follow that the educational system, as it now is, is prepared for these children, or must take them in and treat them as it does other children. But rather it follows that the educational department must enlarge its scope and make special provision for such children. The next question is, What must the educational department do in order to provide for these children?

The attempt to make citizens of this class of children by the same method that is used with normal children has been tried, and has failed. We have always had such children in our schools, and they have always failed to be benefited by the regular school treatment. Under the compulsory education law, we are getting more of them in our schools, and have finally been driven to placing them in these ungraded classes. Having learned something of the lesson that experience has taught us, we have consented to devote nearly half of their time to manual training, and we have seen beneficial results.

The next step is to recognize what has been accepted by nearly all of the people who have studied this problem carefully, and have done most toward its solution, viz.: that book work is practically useless for these children, and that our work with them, instead of being half manual, should be *all* manual and vocational. Careful psychological studies of the type of mind possessed by these defectives show that they are incapable of dealing with abstractions, and that *everything is abstract with them that does not concern those things that enter into their daily life and experience.*

They should, therefore, be placed under a distinct system which is not bound by the rules and regulations of the regular schools. The system should be so arranged that there would be a large amount of freedom and opportunity to train each child in the way in which he is found to be best capable of development. There need be no deep gulf between this system and the other. It should always be easy for a child who has by some misunderstanding been placed in this group, but who shows ability, to get back into the normal grade at any time; just as, at the other end of the scale, it should be easy to send all children, whose parents will permit it, to the colonies or institutions where they are made happy and useful for life.

Such a plan might well occupy the entire time and attention of a superintendent of schools for mental defectives; and, recognizing as it does the fundamental facts and conditions of the problem, it might at the same time embody the most important suggestions that we have recorded as coming from the experience of principals and teachers.

Separate schools would thus be established for these children, each one under a principal who would be an expert in this work, who could

devote his entire time to the problem, and give the adequate supervision which is so seriously needed. In such schools grading would be possible. The lowest grade cases, for whom little can be done, could be put in one group, and the teacher in charge would only be required to keep them happy, train them in simple habits, and do for them what their condition allows. Those who are a little higher could be put together in another class, and so on up to the highest class, which might well be a class of border-line cases. Of these, some might get back into the grades. The question of supervision would thus be largely solved; and the solution of the question of trained teachers would be greatly helped, since it would be possible to obtain at once persons as principals of these schools who are efficient and well trained, and it would also be possible to obtain a few teachers who are equally well trained and capable of leading the work. The other teachers, by observation of their more experienced associates, would learn a large part of the methods that they need. Every effort should be made, however, to secure opportunities for these teachers to study large groups of defective children as they are found in institutions. The new Letchworth Village should become a training school for these teachers, and other institutions that may be established in the vicinity of New York should be planned with the same thing in view. These teachers could also be paid an ample salary, enough at the start to induce them to take up this work, with an ample increase to those who prove effective, who show by their zeal, enthusiasm, and willingness to study the problem, that they are of the right kind.

At least two states (New Jersey and Michigan) are proposing a scale such as the following: The teacher of the ungraded class, who comes properly qualified, to receive a bonus of \$100 the first year, \$200 the second, \$300 the third, and so on, until it becomes \$500—this in addition to the regular salary of the grade teacher. To those unfamiliar with this work this may seem a large bonus. Few people realize the special ability, skill, and training required. These teachers have to be specialists, and, therefore, experts. Again, few realize the nerve-racking work, the discouragements, difficulties, and even dangers these teachers have to face. An adequate salary is the least we can do for them.

The schools established on this independent and free basis would also be able to control the question of material and provide what was needed for their work.

Ultimately these schools should develop into home schools, keeping the children as many hours as possible, and many of them even over night. And, finally, they should develop into city institutions for defectives, thus largely solving the problem.

At this point the question of expense is forced upon us. There is only one answer to the question of cost. *Whatever it costs, it must be done.* This problem is as fundamental to our social well-being as our courts, our sewerage system, or quarantine. In addition to what it will do for these children themselves and for society as a whole, we must

not forget the value of the work to the children in the normal grades. The regular classes are relieved of the burden of these defective children, the teachers are able to do vastly better work, and the children receive the benefit. But more than that. When we consider this problem, as we have done, from the social standpoint, and realize what it may mean to have these children properly cared for and trained, we see that we can ill afford not to expend large sums for the sake of saving these children from becoming public nuisances. Therefore, the question of expense must not enter into the consideration. We have these children. They can only be dealt with in one way, and we must do it, whatever the expense. We must appropriate large sums of money to care for these children, in order to save larger expense in caring for them later in almshouses and prisons, to say nothing of their numerous progeny.

To return to the schools. Not only could they devote themselves, so far as necessary, to manual work and vocational training, but this work could be so systematized as to have high educational value—a thing which the present manual work in the ungraded classes, as a rule, does not have, because of lack of grading and systematic development.

I shall not in this report work out the details of the system. It can be seen in its perfection at the Institution for Feeble-minded in Waverley, Mass., where children of lower grade than any usually found in these ungraded classes are trained to wonderful skill in doing things, and toward earning a living. There is no reason whatever why these New York City children could not be trained in the same way. This tremendous social problem would then be largely solved, except in so far as it involves heredity.

There are, it is true, some difficulties to overcome in the establishment of special schools, in place of the present ungraded classes. But the advantages are so great that methods of overcoming the difficulties should be found. In many places, where the regular schools are now so close together, it would be easy to fill a new school with these mentally defective pupils, without involving any long journeys for any of them. In other places that would be more difficult, and it might involve the transportation of some of them, as the cripples are now conveyed. This would of itself be quite a problem, because the defective children are more difficult to handle en route than are the cripples. Nevertheless, that would not be an insurmountable difficulty.

It is sometimes thought that parents would have more serious objections to a *school* than they do to the ungraded class. But experience in other cities has not verified this belief. Indeed, parents can easily be convinced of the many advantages of separate schools. These advantages have been pointed out by various principals. In such schools these children are away from the normal children and escape the bullying and teasing to which they are liable. To obviate this under the present régime the ungraded classes are now called and dismissed at



different times from the regular school. If the term "ungraded class" has come to have such a significance that parents or children are apt to regard it as synonymous with "crazy class" or something equally unpleasant, an entirely different name could be chosen. Moreover, the character of the school, because of the work and the trained principals and teachers, would soon free it from any odium that might otherwise attach to it. The success that many of these children would have in going to work after they left school would soon make it appeal to the parents.

In regard to working papers—it probably would not be difficult to have the law so modified that children who are recognized as belonging to this type should have (qualified) working papers, which would enable them to take such place as they could without being required to come up to the standard now required of normal children.

The question of what children should be sent to these schools is one of the most difficult of all. The present method, as has been pointed out by the inspector of ungraded classes and the superintendents of schools, is entirely inadequate. One examiner cannot attend to so much work. There should be several assistants; and, when the full size of the problem is recognized, it will be understood that there should be a considerable number of them. Indeed, it is entirely probable that, under ideal conditions, we should examine by the Binet scale, or any that may prove more efficient, every child that enters school, and, from time to time, all children who are not doing their regular work *understandingly*.

Still another thing that will need to be seriously studied, and which is now ignored, is the fact that many children do not show their defects until they are about nine or ten years old. The consequence of this is that the children often get into the grammar school before showing any serious defect. Then they begin to slow down in their development, and, before they get through the grammar school, they are decidedly deficient. Under the present system, these children are often not discovered at all, because some principals understand that no child is to be recommended for the ungraded class who has progressed beyond the primary school. The result is, there are many children in the 7th and 8th grades who are repeaters for two or three years, and are really mentally defective (although they would generally be of high grade—*morons*).

#### IV—Recommendations

In view of the importance of this problem and the future welfare of our people, I should recommend a radical enlargement and extension of the work of the ungraded classes:

First.—By the appointment of a Superintendent of Schools and Classes for Defectives.

Second.—By greatly increasing the appropriations for the work in

accordance with the needs, as determined by those in charge of the problem.

Third.—By the appointment of at least four associate inspectors of ungraded classes.

Fourth.—By the appointment at once of five more examiners (psychologists and physicians), whose duty it should be to determine what children shall be placed in these classes. Additional examiners should be appointed as needed. All repeaters and over-age pupils, together with all pupils now in any of the special classes C, D, E, and ungraded, should be tested by the Binet-Simon scale in the hands of experts trained in its use (as is done in Rochester, N. Y., Cleveland, O., and other places, with signal benefit to the system).

Fifth.—By the establishment as fast as possible of special schools to take as many as possible of these ungraded classes out of the regular schools, to the end that the children may be more adequately directed, supervised, graded, and given appropriate manual training and vocational work.

Sixth.—By the appointment of a number of special assistants—six or eight—whose business it should be to follow up the history of these defective children after they have passed through the schools. After a few years such histories would throw much-needed light on the value of the methods used; and they would point the way to further steps toward protecting society from the future incubus of these irresponsible persons.

Seventh.—It is certainly the duty of the Department of Education to see that the present method of administering supplies is revised, so that the ungraded classes shall not be hampered in their work by the difficulty of obtaining the material and equipment which they need. (Many of the teachers at present spend practically all of their bonus in purchasing supplies which should be furnished by the city.)

Eighth.—A substantial increase in the bonus paid to teachers of these classes (or schools) should be provided; this bonus should be graded, increasing year by year up to a certain limit; teachers should qualify for this increase annually, and only those who show proficiency and growth should be eligible to the advance.

Ninth.—Suitable steps should be taken as rapidly as possible to provide training classes for teachers of defectives. In addition to the class work and theoretical instruction, teachers in training should have access to model schools. These could perhaps be secured at Letchworth Village, or other institutions for the feeble-minded. It is important that such model schools for the teachers in training should be institutional schools. Only in such schools do the teachers see that the children are distinctly feeble-minded. If they see only the children in the ungraded classes or special schools, they tend more or less to retain the impression that the children are really normal, or will yet prove normal; and this impression (or conviction) is a serious handicap to their work.

Tenth.—The child labor law should be so modified as not to apply in

its present form to children who have been declared mentally defective. These children should be allowed to go to work as soon as those in charge of the schools or classes conclude that it is more profitable for these children to be under the direction of their parents or in regular work than in the schools. However, this should apply to such cases only as cannot be placed in an institution or colony.

Eleventh.—That appropriate manual training be made the principal thing in all of these classes; such reading, writing, and numbers as are taught should be taught, so far as possible, in connection with the hand work.

### Conclusion

I find after careful investigation of practically all of the ungraded classes in New York City that, while a great work is being done and a work which cannot and must not be stopped because of its value to the children who are in the regular grades, yet, for lack of funds, for lack of adequate help to carry out the plan, the work is very far from being what it should be. Many children are not getting what they might get because of lack of equipment and material in the classroom. Many children are not in the classes who ought to be in them, because they cannot be passed upon and transferred to these classes, owing to the lack of help to make the examination. Many defective children are still in the grades unrecognized. The entire treatment of defective children is very inadequate, owing to the failure to recognize the high grade type of mental defective. Much time is wasted in teaching children reading, writing, and counting who will never be able to make any use of them. The whole movement is handicapped for lack of trained teachers; and this is largely because of lack of sufficient financial inducement to good teachers to go into the work.

In this report I have only touched the most important aspects of the problem. It is useless to go into details until these are considered. In my recommendations I have mentioned only the most important items. Many minor ones will follow inevitably if these larger and most important matters receive due consideration and lead to proper action.

Pending the adoption of the larger and better system recommended herein, it is possible to make many improvements in the present classes in accordance with the suggestions given above, and this should be done at once.



## **COURTIS TEST IN ARITHMETIC**



**CORRESPONDENCE BETWEEN THE COMMITTEE ON SCHOOL  
INQUIRY, AND PROF. PAUL H. HANUS, AND MR. STUART  
A. COURTIS RELATING TO MR. COURTIS'S REPORT.**

**Letter from the Chairman of the Committee on School Inquiry to Mr. Stuart  
Courtis proffering questions.**

AUGUST 14, 1912.

STUART COURTIS, ESQ.,

*Detroit Day and Night School,  
Detroit, Michigan.*

DEAR SIR:—The Committee on School Inquiry, after reading the galley proof of your report rendered to it as one of the staff specialists, feels that the report might be strengthened in certain particulars as to which it desires to offer you the following suggestions with the request that you supplement the report as indicated. If you are able to amend and supplement the report as desired, the Committee requests that you be good enough to forward to it typewritten amendments to the galley proof now in hand, which the Committee will then transmit to the printer for a new galley.

1. The Committee thinks it desirable to change the designation of tables numbered 8 to 14 to read "Number of Examples Worked and Number of Children Working Them in Each Grade." Would it not also be well to make the tables clearer by substituting for the heading "Score" the heading "Number of Examples Attempted and Gotten Right" (galleys 254-5)?

2. You conclude the statement on galley 257 with the phrase that "neither method nor teacher is of much account." The Committee assumes that you do not intend by this phrase to lay down a universal proposition to apply to teaching throughout the schools. In order to make the matter clear, will you please state how and where efficient methods and efficient teachers are needed in arithmetic?

3. Please justify more specifically your time limit of one minute allowed each child for the completion of each of the first six tests. This the Committee thinks necessary in view of the results stated, namely, that 336 pupils can work out problems correctly when given a time limit of 90 seconds, while only 12 pupils work them out correctly when given a time limit of 60 seconds for each of the first six tests.

Please let me know by return mail how soon I may expect from you the material requested.

Respectfully yours,

JOHN PURROY MITCHEL,

*Chairman, Committee on School Inquiry.*

**Letter from Dr. Stuart Courtis answering questions proffered in the letter of the Chairman of the Committee on School Inquiry.**

SEPTEMBER 7, 1912.

MY DEAR PROFESSOR HANUS:—I am in receipt of a letter from President Mitchel under date of September 5 in which he renews his request that I furnish the Committee with the data indicated in his letter of August 14th. He mentions Tuesday as the day when he hopes the material may be presented. I have done nothing with the suggestions while awaiting proof of the supplementary report which has not yet been received. There will be many corrections and adjustments necessary, and I had expected to submit all of these at once. However, I am writing at once such reply as I can make at this time in order that I may not seem to wilfully neglect the Committee's request.

1. The Committee suggested certain changes in the headings and designations of Tables 8-14. I had already of my own initiative made very similar changes in my correction of the proof. The phrasing suggested by the Committee does not seem any improvement on my own as revised, but if, after seeing the corrected proof, it still feels that the tables are not sufficiently clear, I shall be glad to try again. I do not care to adopt the phrasing suggested as it stands.

2. This paragraph in the Committee's letter was, "You conclude the statement on galley 257 with the phrase that 'neither method nor teacher is of much account.' The Committee assumes that you do not intend by this phrase to lay down a universal proposition to apply to teaching throughout the schools. In order to make the matter clear, will you please state how and where efficient methods and efficient teachers are needed in arithmetic?"

I have read and re-read galley 257 and other galleys as well searching for this statement. On galley 257 I find the sentence, "The average in one case (good teacher, best method) will be higher than in the other (poor teacher, poor method), but in each class the range of variation within the class will so *greatly exceed the difference* between the averages of the two classes as to make the gain due to teacher or method of small account. Only very careless reading could twist this statement into the first one quoted. This statement distinctly recognizes the fact that a good teacher does better than a poor teacher, that a good method produces better results than a poor method. The great fact shown by the investigation, however, is that the *degree* of improvement produced by quality of teacher or method is so small when *compared* with the effects of the fundamental factor in education, *individual*



*differences*, that hope of improvement must be sought in control of the major factor rather than in control of the minor factors. As the statement is written in the report, it is correct, and, in my judgment, clear and forceful, backed up with evidence which I can duplicate from many sources. I regard it as one of my greatest contributions that I have been able to present statistical proof of the fact and under the circumstances do not see any occasion for change.

3. The third point raised is due to a failure to carry throughout a discussion a statement made at the beginning of it. On galley 254 the phrase "like those of Test 7" applies to all of the paragraph that follows: the number given, 21 boys per thousand, 13 boys per thousand, 336 boys per thousand at the different rates 90 seconds, 60 seconds, etc., are for examples like Test 7; have no reference whatever to the first six tests.

A sentence in the Committee's letter may need comment. "Please justify more specifically your time limit of one minute allowed each child for the *completion* of the first six tests." (Self-evident from context, P. H. H.) Tests 1-4 are component abilities, Test 7 a complex built out of these elements. Each example in Test 1, for instance, each answer, calls for a single thought; in Test 7, each example calls for 50 thoughts. The standard rate for Test 1 is 63 answers per minute, for Test 7 a little more than 14 answers per 12 minutes, or a little more than 1 per minute. As each example in Test 7 involves fifty times the mental effort that each example in Test 1 does, it must be clear that these two standard rates are in close agreement.

Should any discussion arise as to my referring to Dr. Bachman as in charge of the Educational Aspects of the Committee's work, upon which statement President Mitchel comments, please say for me that I read it in the *Globe*. As it agreed with the general statements of Mr. Lewis that the work of the Committee was to be continued indefinitely I saw no reason to question it and accepted it as fact.

President Mitchel's definition of my relations to the Committee, while clear and specific, does not agree with my understanding of those relations previous to his letter of the 14th. It seems that my "ultimate responsibility is to the City of New York through the Committee." I shall await with much interest the outcome of the meeting on Tuesday, and your version of the situation. In the absence of any previous formal definition, I suppose I am bound by such as may be made now.

Yours very truly,

S. A. COURTIS.



REPORT ON

EDUCATIONAL ASPECTS OF THE  
PUBLIC SCHOOL SYSTEM  
OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY  
OF THE BOARD OF ESTIMATE  
AND APPORTIONMENT

*Subdivision I*                      PART II                      *Elementary Schools*

SECTION D.—THE COURTIS TESTS IN ARITHMETIC

BY

STUART A. COURTIS

Head of the Department of Science and Mathematics, Detroit Home and Day School,  
Detroit, Mich.; Originator of the Courtis Tests

CITY OF NEW YORK  
1911-1912



Detroit, Mich., July 15th, 1912.

Professor PAUL H. HANUS,

In Charge of Educational Aspects of School Inquiry, New York City.

DEAR SIR:

I beg to report that, pursuant to your instructions, I have applied the Curtis Standard Tests in Arithmetic to a selected list of New York public schools for the purpose of determining—

1. The standard of achievement in the fundamental operations with whole numbers, and in simple reasoning, in arithmetic.
2. The relative achievements of certain of the schools tested, as measured by this standard.
3. The relative achievements of grades and individuals, as measured by this standard, so far as is necessary to indicate to teachers, principals, and superintendents how such knowledge could be used to make their work more effective.
4. The relative achievements of the New York schools as a whole, as measured by standard scores derived from tests in other cities.

The results from the testing work, and the inferences to be drawn therefrom, will be found in the accompanying report. From the very outset, however, it must be recognized that comparative testing is a distinct type of work in itself, differentiated in many important characteristics from the ordinary examination. In particular, the Curtis tests, having been designed for a specific purpose, are most readily understood when that purpose is kept in mind. Accordingly, it has seemed wise to preface the more definite results of the investigation with a very brief statement of the historical development of comparative testing, and of the peculiar circumstances that led to the evolution of the Curtis tests. Further, in view of the surprising character of the results and of their importance to education generally, it has seemed best to give in minute detail the various features, both of the tests themselves and of the procedure of examination, scoring; and tabulation, that a full understanding of all points may be had by those whose interest or inclinations may lead them to a close study of the same. For the general reader, however, the results and conclusions alone are important. Accordingly, in the outline at the beginning of the report there will be found a summary of the characteristics of the various sections that will enable each individual to turn at once to those portions of peculiar interest to him.

Respectfully submitted,

S. A. COURTIS.



# TABLE OF CONTENTS

Section	Page
I. Historical Development of Comparative Testing.	
Work of Rice and Stone . . . . .	397
Evolution of the Courtis System . . . . .	397
II. Characteristic Features of the Courtis Standard Tests.	
Fundamental characteristics . . . . .	398
Selection of abilities to be tested . . . . .	399
General plan of series . . . . .	400
Details of Tests 1-4 . . . . .	401
Details of Test 5 . . . . .	406
Details of Test 6 . . . . .	407
Details of Test 7 . . . . .	407
Details of Test 8 . . . . .	413
Details of record sheet . . . . .	415
Order in which tests are given . . . . .	416
Time allowances . . . . .	416
III. General Plan of the Investigation.	
Selection of schools . . . . .	418
Relations with principals . . . . .	420
Details in regard to the force of examiners . . . . .	420
Details in regard to the procedure of examinations . . . . .	421
Details in regard to the scoring . . . . .	422
Details in regard to the tabulation . . . . .	423
IV. Validity of Results.	
Uniform tests . . . . .	423
Uniform conditions . . . . .	424
Timing . . . . .	424
Training of examiners . . . . .	425
Answering of questions . . . . .	425
Effects of personality . . . . .	426
Checks . . . . .	426
Preparation of classes . . . . .	427
Illegitimate preparation . . . . .	428
Effects of special preparation . . . . .	429
Uniformity of scoring . . . . .	430
Accuracy of scoring . . . . .	430
Checks . . . . .	430
Accuracy of tabulations . . . . .	431
Computations . . . . .	432
Effect of rejecting certain records . . . . .	432
Summary . . . . .	432
V. Results—Individual Variation.	
Summary and introduction . . . . .	433
A typical result . . . . .	433

Section	Page
Objections answered . . . . .	440
Overlapping of grades . . . . .	448
Cause . . . . .	454
Individual differences . . . . .	454
Selective response of individuals . . . . .	458
Cause: heredity (?) . . . . .	461
Conclusions . . . . .	463
<b>VI. Standards: Their Selection and Use.</b>	
Content of Section . . . . .	464
Standards: general discussion . . . . .	464
Comparison with New York averages . . . . .	465
Explanations . . . . .	466
Accuracy . . . . .	467
Factors determining accuracy . . . . .	468
Influence of abstract work on reasoning . . . . .	473
Relation between accuracy in abstract work and accuracy in reasoning . . . . .	479
Relation of drill on tables to accuracy . . . . .	480
Scores recommended as standards . . . . .	484
The comparative graph . . . . .	485
Uses—	
Diagnosis of individual defects . . . . .	486
Records of growth . . . . .	488
Special devices not essential . . . . .	489
Diagnosis of defects in course of study . . . . .	490
Standardization possible . . . . .	492
Test of arithmetical abilities of certain employees in a large department store . . . . .	493
Summary . . . . .	502
<b>VII. Standard Scores in Relation to Supervision and Administration.</b>	
Introduction: point of view . . . . .	503
Measurement of efficiency of teacher . . . . .	503
Comparison of schools . . . . .	506
Effects of special classes . . . . .	509
Effects of special methods of drill . . . . .	512
Effects of foreign parentage . . . . .	514
Relation between abilities—	
Speed in Test 5 and knowledge of the tables . . . . .	519
Speed in Test 5 and abstract work . . . . .	522
Speed in Test 5 and simple reasoning . . . . .	523
Sex differences . . . . .	524
Efficiency of present system of grading . . . . .	526
Defects of course of study by analysis of mistakes—	
In abstract work, Test 7 . . . . .	530
In reasoning work, Test 6 . . . . .	531
In reasoning work, Test 8 . . . . .	535
Value of life histories . . . . .	538
Conclusions . . . . .	540



Section	Page
VIII. Recommendations.	
General significance of investigation . . . . .	541
General recommendations . . . . .	541
Specific recommendations— . . . . .	542
Experimental determination of relation between social condition and ability . . . . .	542
Material available for reasoning work . . . . .	543
Physical and mental growth . . . . .	543
Future needs . . . . .	543
Determination of efficient methods . . . . .	543
Bureau of Investigation and Appraisal . . . . .	546



# COURTIS STANDARD TESTS IN ARITHMETIC

## REPORT OF MEASUREMENTS OF ACHIEVEMENTS AND STANDARDS OF THE NEW YORK CITY PUBLIC SCHOOLS

### Section I

#### Historical Development of Comparative Testing

##### Work of Rice

Of the many investigators of conditions in arithmetic, the name of Dr. J. M. Rice<sup>1</sup> will always receive especial mention. He, more than any other, seems first to have recognized the possibilities of comparative tests given to many classes and schools under identical conditions. His results from six thousand children in eighteen schools, representing seven cities, have had a wide influence both upon educational thinking and upon the methods of other investigators.

##### Work of Stone

The evident defects of Rice's tests and methods, however, led Dr. C. W. Stone<sup>2</sup> to attempt the standardization of a measure for sixth-grade work. Carefully prepared tests were given under uniform conditions to the pupils of twenty-six school systems in seven states. A full account of tests, methods, and tabulations was published, making it possible for the teacher of any sixth-grade class to compare his work with that of the schools tested by giving the same tests under the same conditions, and following the same plan of scoring.

#### Evolution of the Courtis System

The idea of a standard measure of achievement for the work of even a single grade met with instant response from teachers generally. The writer, having charge of the work in arithmetic in the Liggett School, formerly the Detroit Home and Day School, a private school for girls,

<sup>1</sup> J. M. RICE ..... '02  
Educational Research: A Test in Arithmetic, The Forum, Vol. 34, pp. 281-297; Causes of Success and Failure in Arithmetic, pp. 437-452.

<sup>2</sup> C. W. STONE ..... '08  
Arithmetical Abilities and Some Factors Determining Them, Columbia University Contributions to Education, Teachers' College Series No. 19.

was among those who took up the work, but he extended the idea by measuring, by the same standard, every grade in the school from the third to the thirteenth. The resulting curves for the development of the several abilities through the school, together with the wide individual variation found in every grade, led at once to the idea of control of individual development through standard scores and standard growths for every grade. It was evident, however, that the complexity of the Stone tests prevented a satisfactory interpretation of the meaning of the results. As Stone himself concludes, ability in arithmetic is evidently not a single ability, but a complex of many abilities. Accordingly, the experimental work of the school was limited by Courtis to work in the fundamental operations with whole numbers, and a series of tests was gradually evolved to measure those elements of such work that need to be controlled in the classroom. It was soon found, however, that the number of children in the school was too small to permit the selection of standard scores on anything like an intelligent basis. The next step, therefore, was to print the tests in quantity with complete instructions for every phase of the work, and to secure the co-operation of many schools and teachers in giving and scoring the papers under identical conditions. The measures of approximately ten thousand children from some seventy schools in ten states were secured in this way, and standard scores for each test and grade were selected and published.<sup>1</sup> These are the standard scores referred to below.

It will be seen, therefore, that the genesis of the testing work has been as follows: To Rice is due the credit for the fundamental idea of comparison of schools by the results of tests given to all under uniform conditions; Stone emphasized standard achievement and scientific care in the preparation of the tests and in control of conditions; Courtis extended the idea of standards and adapted both tests and testing to the measurement and improvement of the efficiency of classroom work.

## Section II

### Characteristic Features of the Courtis Standard Tests

#### Fundamental Characteristics

The fundamental idea in comparative testing is the use of a common measure in determining the relative achievements of different classes; and the more nearly the measurements can be expressed in terms of units along an absolute scale whose zero point is known, the more perfect is the valuation of the results. In the Courtis system these fundamental ideas have determined four of its five distinctive features, namely, (1) uniform tests composed of equal units; (2) of sufficient length to keep all busy during the whole of the time allowed; (3) tests which

<sup>1</sup> *The Elementary School Teacher*, Vol. XII, No. 3, November, 1911.

are given under identical conditions; (4) to successive grades. The fifth characteristic was determined by the purpose for which the tests were to be used—the improvement of classroom work in the fundamentals of arithmetic. It is best described by saying that the series of tests as a whole measure, not independent, but closely related, abilities, so that the results reveal not only the development of the specific elements measured, but how far the organization of these elements into the desired complexes takes place in the school. Each of these characteristics will be discussed in detail.

### Selection of Abilities to Be Tested

Before proceeding to the detailed discussion of the various tests however, it will be necessary to sketch briefly the underlying plan of the series; for both the number of tests and the abilities tested were determined by the fundamental purpose of the work—the improvement of the efficiency of the teaching effort.

As has already been mentioned, the results from the Stone tests were difficult to interpret. When a child failed in a problem involving fractions by making a mistake in multiplication, the reasons for the failure may have been (1) lack of knowledge of the multiplication tables, or simply careless use of the multiplication tables caused (2) by a struggle with fractions, or (3) by the reasoning involved. While, whatever the reason, the mistake was a mistake in multiplication, the corrective work to be done in each of the three cases mentioned would have been very different.

It seemed wise, therefore, to determine first of all to what degree the fundamental processes with whole numbers had been mastered in the various grades. But appropriate tests soon disclosed the fact that nothing approaching mastery existed in any grade—in every grade there were great individual differences in the amount of work finished in a given time, and much of the work was grossly inaccurate. The logical procedure seemed to be to attempt to bring these undesirable conditions under control, and to insure to every child at least a minimum speed and accuracy in simple computations with whole numbers.

An analysis of the mistakes made by the children, however, emphasized the conclusion reached by Stone that such work is a complex of many abilities. In a long-division example, for instance, one child made repeated mistakes in subtraction, another in multiplication, while a third failed to “carry” accurately. Denoting the complex ability to work with speed and accuracy in the four processes as ability in “Fundamentals,” the attempt was then made to analyze this ability into its component elements. The analysis, however, was made on a practical, not on a psychological basis. For instance, Thorndike<sup>1</sup> states that there are at least nine psychological activities in simple column addition. Many of these

<sup>1</sup> The School Review, May, 1912, p. 290.

abilities, however, are beyond the teacher's control. This is not true of (1-4) knowledge of the fundamental combinations and processes in the four operations, (5) rate at which figures are written, (6) ability to borrow and carry, (7) ability to copy correctly the figures of a problem, (8) ability to follow instructions. Accordingly, provision is made in the Courtis tests for the measurement of each of these eight abilities, as well as for the measurement of ability in fundamentals.

A further question remained to be settled. Granted that a child can work abstract examples with desirable speed and accuracy, will the ability stand up under the strains imposed by its use in problems involving reasoning activities as well? It was soon apparent, however, that "reasoning" in arithmetic is also a very complex activity; that before any real measurement of reasoning ability could be attempted the influence of many factors would have to be evaluated experimentally. The two most evident factors were ability to comprehend from a printed problem the situation presented, and the ability to determine the proper operation to be used in the given situation.

Accordingly, two reasoning tests were constructed and are described below. It is to be particularly noted, however, that, although these tests are called reasoning tests, it is not claimed in any way that they are more than crude measures of certain limited phases of the reasoning power of children in arithmetical work. The purpose of the tests is to supply information needed in the interpretation of the facts in regard to the development and use of the ability in Fundamentals, and they should be criticized from no other point of view.

### General Plan of Series

The resulting series of tests, then, have for their central purpose the measurement of the component elements of ability in Fundamentals and of the degree of organization of such component elements into the resulting complexes. The tests are eight in number and are known as—

Test No. 1.	Speed Test—Addition	} Combinations 0—9.
" " 2.	" " —Subtraction	
" " 3.	" " —Multiplication	
" " 4.	" " —Division	
" " 5.	" " —Copying Figures. (Rate of motor activity.)	} Judgment of operation to be used in simple one-step problems.)
" " 6.	" " —Reasoning. (Rate of motor activity.)	
" " 7.	" " —Fundamentals. (Abstract examples in the four operations—computation.)	} Two-step problems involving computations.)
" " 8.	" " —Reasoning. (Two-step problems involving computations.)	

Each of these is illustrated and discussed below. The reader will do well to get the general scheme clearly in mind in order to follow easily the discussion of results. He should note that tests 1-6 are the

elemental abilities, tests 7 and 8 the complexes; that test No. 7 involves the use of the abilities tested in Nos. 1-5, and that No. 8 involves all the abilities measured in the previous tests.

The use of the term "Speed" in connection with the elemental tests needs explanation. The abilities themselves are so very elemental that if sufficient time were given practically every child above the fourth grade (except defectives) would be able to complete the whole of each of these tests, and to do the work correctly. Moreover, the attitudes of the children toward the work would be very different in the different grades by reason of changes in the maturity of the children. But by putting the work on a speed basis a situation is created that is much more nearly uniform from individual to individual, and from grade to grade—straight-ahead work at one's top speed—and the results disclose at once where weaknesses exist; for the abilities break down at their weakest points. Speed, then, is not insisted on for the sake of speed, but because speed best ministers to uniformity of conditions, and to exposure of weaknesses.

#### Details of Tests Nos. 1-4

Taking up now the discussion of details, in figures Nos. 1, 2, 3, and 4 will be found illustrations of the first four speed tests. As these differ merely in the operation to be used, the characteristics of all four can be discussed at one time. These are (1) completeness; and (2) uniformity.

##### 1. Completeness

Each test contains in its first five lines the 100 fundamental combinations for its operation (except division). The sixth line is a repeat in order that, when necessary, the entire hundred combinations may be finished without having the work influenced by the knowledge that the end has been reached. It will be noted that the expression "one hundred fundamental combinations" is used in place of the conventional "forty-five fundamental combinations" and their reverses. Analysis of the mistakes of many individuals as well as direct experiments in the laboratory have proved conclusively that it is possible for an individual to know the result of three times four without knowing that of four times three; of four plus three, and not that of three plus four. Emphasis on the number of combinations, as 45, tends to restrict the teaching to the direct combinations only. Careful time studies in the laboratory make it certain that each individual's reaction toward each combination is highly specialized. Consequently, it may become important to test an individual's response to every one of the hundred combinations in use in order that, where peculiarities exist, they may be detected and special remedial work undertaken to remove difficulties.

Many educators declare, also, that the zero combinations should not



"Measure the efficiency of the entire school, not the individual ability of the few"

SCORE	
No. attempted	_____
No. right	_____

### ARITHMETIC—Test No. 1. Speed Test—Addition

Name \_\_\_\_\_ School \_\_\_\_\_ Grade \_\_\_\_\_

Write on this paper, in the space between the lines, the answers to as many of these addition examples as possible in the time allowed.

8 9 7 5 2 1 9 6 0 5	1 3 6 0 3 5 8 9 7 2	1 7 9 3 2 3 7 6 0 4	1 5 9 0 4 2 6 5 1 2
5 3 6 9 4 1 3 5 0 3	1 2 5 6 7 4 9 8 0 2	3 4 7 0 3 1 6 9 8 5	1 4 8 0 2 6 7 9 5 7
1 8 6 0 5 9 4 7 2 4	4 8 9 5 3 1 8 7 0 6	1 3 8 2 3 7 9 5 0 7	2 9 7 4 5 2 3 8 0 2
3 7 9 0 4 3 4 8 6 5	2 4 5 1 6 1 8 9 0 2	9 2 5 0 6 1 8 7 4 3	7 4 8 0 3 1 9 6 0 4
6 9 8 1 2 1 4 7 1 3	1 6 7 0 2 8 4 5 3 6	5 9 6 7 5 5 2 8 0 3	4 8 5 0 7 4 2 6 9 3
1 4 9 0 4 6 7 5 1 2	1 2 6 0 3 6 7 9 7 2	8 9 7 8 5 1 9 6 0 2	1 7 9 3 2 3 7 6 0 4

COPYRIGHTED 1912 BY S. A. CORWELL, 441 JOHN STREET, DETROIT, MICH.  
ALL RIGHTS RESERVED

Fig. I



"Measure the efficiency of the entire school, not the individual ability of the few"

SCORE	
No. attempted	_____
No. right	_____

### ARITHMETIC—Test No. 2. Speed Test—Subtraction

Name \_\_\_\_\_ School \_\_\_\_\_ Grade \_\_\_\_\_

Write on this paper, in the space between the lines, the answers to as many of these subtraction examples as possible in the time allowed.

6 11 15 10 12 0 7 8 9 4	8 11 12 5 10 0 9 7 1 2	1 9 13 4 12 0 7 8 3 6	9 7 11 8 12 9 3 6 1 3
5 8 17 6 11 5 6 9 4 8	4 10 13 10 9 4 7 5 1 4	1 6 15 4 8 1 3 9 2 3	2 7 13 3 10 1 5 7 2 5
9 7 14 5 11 0 2 8 4 2	7 8 16 9 11 0 5 7 1 4	5 12 15 5 16 0 9 6 3 8	4 9 16 7 11 0 6 9 1 3
6 7 17 6 9 6 4 8 1 2	2 10 11 9 14 0 6 5 8 7	8 13 12 8 13 8 9 5 7 4	2 12 15 3 10 2 8 7 1 3
3 8 14 6 10 0 4 9 5 4	7 6 13 10 9 7 2 6 8 3	3 9 14 4 18 3 5 6 1 9	0 5 14 7 8 0 2 5 6 2
1 9 13 4 12 0 7 8 3 6	6 11 15 10 12 0 7 8 9 4	9 7 11 8 12 9 3 6 1 3	8 11 12 5 10 0 9 7 1 2

COPYRIGHTED 1912 BY S. A. CORWELL, 441 JOHN STREET, DETROIT, MICH.  
ALL RIGHTS RESERVED

Fig. II





"Measure the efficiency of the entire school, not the individual ability of the few"

### ARITHMETIC—Test No. 3. Speed Test—Multiplication

Name \_\_\_\_\_ School \_\_\_\_\_ Grade \_\_\_\_\_

SCORE	
No. attempted	_____
No. right	_____

Write on this paper, in the space between the lines, the answers to as many of these multiplication examples as possible in the time allowed.

$\begin{array}{r} 3\ 4\ 9\ 0\ 5 \\ 2\ 7\ 8\ 2\ 6 \\ \hline \end{array}$	$\begin{array}{r} 4\ 2\ 7\ 4\ 9 \\ 1\ 9\ 6\ 0\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9\ 5\ 4\ 7\ 6 \\ 1\ 2\ 8\ 0\ 5 \\ \hline \end{array}$	$\begin{array}{r} 2\ 3\ 9\ 0\ 7 \\ 1\ 3\ 6\ 5\ 4 \\ \hline \end{array}$
$\begin{array}{r} 1\ 2\ 8\ 1\ 5 \\ 9\ 5\ 7\ 1\ 3 \\ \hline \end{array}$	$\begin{array}{r} 1\ 2\ 7\ 0\ 8 \\ 6\ 8\ 7\ 6\ 3 \\ \hline \end{array}$	$\begin{array}{r} 2\ 5\ 6\ 0\ 7 \\ 3\ 5\ 9\ 8\ 3 \\ \hline \end{array}$	$\begin{array}{r} 8\ 2\ 7\ 5\ 4 \\ 1\ 6\ 9\ 0\ 6 \\ \hline \end{array}$
$\begin{array}{r} 3\ 2\ 6\ 0\ 8 \\ 1\ 4\ 7\ 1\ 5 \\ \hline \end{array}$	$\begin{array}{r} 1\ 3\ 7\ 6\ 5 \\ 2\ 5\ 8\ 0\ 9 \\ \hline \end{array}$	$\begin{array}{r} 4\ 3\ 9\ 8\ 6 \\ 2\ 6\ 7\ 0\ 4 \\ \hline \end{array}$	$\begin{array}{r} 6\ 2\ 8\ 9\ 5 \\ 1\ 7\ 4\ 0\ 7 \\ \hline \end{array}$
$\begin{array}{r} 7\ 3\ 9\ 2\ 4 \\ 1\ 8\ 9\ 0\ 3 \\ \hline \end{array}$	$\begin{array}{r} 1\ 4\ 8\ 0\ 4 \\ 5\ 4\ 9\ 3\ 5 \\ \hline \end{array}$	$\begin{array}{r} 1\ 6\ 8\ 0\ 9 \\ 4\ 2\ 8\ 7\ 3 \\ \hline \end{array}$	$\begin{array}{r} 1\ 3\ 6\ 0\ 3 \\ 7\ 4\ 8\ 0\ 9 \\ \hline \end{array}$
$\begin{array}{r} 1\ 6\ 9\ 1\ 7 \\ 8\ 2\ 4\ 0\ 2 \\ \hline \end{array}$	$\begin{array}{r} 2\ 5\ 4\ 3\ 7 \\ 2\ 8\ 9\ 0\ 5 \\ \hline \end{array}$	$\begin{array}{r} 1\ 9\ 8\ 0\ 3 \\ 3\ 2\ 6\ 4\ 7 \\ \hline \end{array}$	$\begin{array}{r} 5\ 8\ 6\ 0\ 5 \\ 1\ 2\ 3\ 9\ 4 \\ \hline \end{array}$
$\begin{array}{r} 4\ 2\ 7\ 4\ 9 \\ 1\ 9\ 6\ 0\ 5 \\ \hline \end{array}$	$\begin{array}{r} 3\ 4\ 9\ 0\ 5 \\ 2\ 7\ 8\ 2\ 6 \\ \hline \end{array}$	$\begin{array}{r} 2\ 3\ 9\ 0\ 7 \\ 1\ 3\ 6\ 5\ 4 \\ \hline \end{array}$	$\begin{array}{r} 9\ 5\ 4\ 7\ 6 \\ 1\ 2\ 8\ 0\ 5 \\ \hline \end{array}$

COPYRIGHTED, 1912, BY S. A. COURTIS, 441 JOHN B STREET, DETROIT, MICH.  
ALL RIGHTS RESERVED

Fig. III



"Measure the efficiency of the entire school, not the individual ability of the few"

### ARITHMETIC—Test No. 4. Speed Test—Division

Name \_\_\_\_\_ School \_\_\_\_\_ Grade \_\_\_\_\_

SCORE	
No. attempted	_____
No. right	_____

Write on this paper, in the space between the lines, the answers to as many of these division examples as possible in time allowed.

$1\overline{)8}\ 5\overline{)30}\ 8\overline{)72}\ 1\overline{)0}\ 9\overline{)36}$	$2\overline{)6}\ 4\overline{)24}\ 7\overline{)63}\ 6\overline{)0}\ 8\overline{)32}$	$9\overline{)9}\ 3\overline{)21}\ 6\overline{)48}\ 1\overline{)1}\ 5\overline{)10}$	$3\overline{)9}\ 4\overline{)32}\ 6\overline{)36}\ 2\overline{)0}\ 7\overline{)28}$
$5\overline{)5}\ 4\overline{)36}\ 9\overline{)54}\ 8\overline{)0}\ 4\overline{)12}$	$1\overline{)5}\ 2\overline{)16}\ 8\overline{)48}\ 1\overline{)2}\ 9\overline{)27}$	$1\overline{)4}\ 5\overline{)35}\ 9\overline{)45}\ 2\overline{)2}\ 3\overline{)12}$	$8\overline{)8}\ 4\overline{)28}\ 5\overline{)40}\ 2\overline{)2}\ 8\overline{)16}$
$5\overline{)0}\ 3\overline{)24}\ 9\overline{)63}\ 2\overline{)4}\ 8\overline{)24}$	$6\overline{)6}\ 3\overline{)27}\ 8\overline{)64}\ 1\overline{)2}\ 4\overline{)16}$	$3\overline{)6}\ 4\overline{)20}\ 7\overline{)49}\ 1\overline{)3}\ 2\overline{)8}$	$1\overline{)7}\ 2\overline{)10}\ 7\overline{)42}\ 1\overline{)1}\ 6\overline{)18}$
$4\overline{)4}\ 3\overline{)15}\ 9\overline{)81}\ 7\overline{)0}\ 6\overline{)12}$	$4\overline{)4}\ 6\overline{)30}\ 8\overline{)56}\ 1\overline{)0}\ 7\overline{)14}$	$7\overline{)7}\ 2\overline{)18}\ 6\overline{)42}\ 3\overline{)0}\ 7\overline{)21}$	$5\overline{)5}\ 2\overline{)14}\ 8\overline{)40}\ 9\overline{)0}\ 5\overline{)15}$
$1\overline{)6}\ 7\overline{)35}\ 6\overline{)54}\ 1\overline{)3}\ 5\overline{)20}$	$1\overline{)9}\ 5\overline{)25}\ 7\overline{)56}\ 3\overline{)3}\ 9\overline{)18}$	$1\overline{)5}\ 3\overline{)18}\ 9\overline{)72}\ 4\overline{)0}\ 6\overline{)24}$	$1\overline{)4}\ 2\overline{)12}\ 5\overline{)45}\ 3\overline{)3}\ 4\overline{)8}$
$3\overline{)9}\ 4\overline{)32}\ 6\overline{)36}\ 2\overline{)0}\ 7\overline{)28}$	$2\overline{)6}\ 4\overline{)24}\ 7\overline{)35}\ 6\overline{)0}\ 8\overline{)32}$	$1\overline{)8}\ 5\overline{)30}\ 8\overline{)72}\ 1\overline{)6}\ 9\overline{)36}$	$9\overline{)9}\ 3\overline{)21}\ 6\overline{)48}\ 1\overline{)1}\ 5\overline{)10}$

COPYRIGHTED, 1912, BY S. A. COURTIS, 441 JOHN B STREET, DETROIT, MICH.  
ALL RIGHTS RESERVED

Fig. IV

be included in such a test. This is, of course, a matter of opinion. The inclusion of such combinations in these tests, however, is not an arbitrary decision, but a deliberate judgment based upon the results of many tests and experiments. For instance, (1) it was found that in the papers from the Stone tests, where a cipher occurred in the multiplier, many mistakes were made in the failure to multiply by this figure correctly; (2) that in a multiplication speed test of forty-one mature individuals—graduate students, teachers, superintendents, etc.—at Columbia University, in the summer of 1910, eighteen of the group made 104 mistakes in the zero combinations; (3) that in classes in high-school algebra substitution involving the use of zero as a multiplier causes many mistakes; (4) that children taught the zero combinations in the regular way in the early grades have no difficulty with them, while classes which have never received this training not only make mistakes, but the mistakes persist if remedial training is attempted later than the seventh grade; finally (5) that, even when testing adults with sufficient control to write the answer correctly, time studies show the lengthening of the interval required to make the proper response to these combinations. For all these reasons, and for others which cannot be discussed here, the entire one hundred combinations are included in the tests.

A single exception is made in the case of the division speed test. Here the combinations—eight into zero, six into zero, etc.—are included, but the forms—zero into eight, etc.—are not. The answer in these cases requires the use of a symbol with which the children are not familiar, and the form itself is never met in elementary mathematics. They have been replaced by repetitions of the simpler combinations.

## 2. Uniformity

The distribution of the combinations within a test is not a chance one, but is based upon a regular plan. As shown in Table I, the one hundred combinations are grouped into five equal divisions differing in degree of difficulty. As previous tests had proved that to any one individual the actual difficulty of the various combinations was an individual peculiarity—that to one person seven times eight might present no particular difficulty, while three times two might present wellnigh insurmountable difficulties—the basis for estimation of degree of difficulty was taken as the effort that would be involved in working out the answer if it were not remembered. On this basis the five divisions, shown in Table I, were formed; one combination was chosen from each division, each group of five combinations in the test being thus the equal of any other group. In making up the groups, several other factors were taken into consideration, namely, the number and difficulty (since some figures take longer to write than others) of the figures that must be written in each line in filling in the answers, and the distributions of the various tables throughout the tests, so that the combinations of any one table might not occur too closely together.

Table I—Showing Subdivisions of the Combinations in Test 1

GROUP I—Very Easy....	0	0	0	0	0	0	0	0	0	0
	0	1	2	3	4	5	6	7	8	9
	1	2	3	4	5	6	7	8	9	1
	0	0	0	0	0	0	0	0	0	1
GROUP II—Easy .....	1	1	1	1	1	1	1	1	2	2
	2	3	4	5	6	7	8	9	1	2
	3	4	5	6	7	8	9	3	4	5
	1	1	1	1	1	1	1	1	3	4
GROUP III—Average ...	2	2	2	2	2	3	3	3	3	3
	3	4	5	6	7	2	4	5	6	7
	4	4	4	5	5	5	6	6	7	7
	2	3	5	2	3	4	2	3	2	3
GROUP IV—Hard .....	2	2	3	3	4	4	4	4	6	6
	8	9	8	9	6	7	8	9	4	6
	7	8	8	8	9	9	9	7	8	9
	4	2	3	4	2	3	4	7	8	9
GROUP V—Very Hard..	5	5	5	5	6	6	6	6	7	7
	6	7	8	9	5	7	8	9	5	6
	7	7	8	8	8	8	9	9	9	9
	8	9	5	6	7	9	5	6	7	8

In any such scheme, involving the interplay of several factors, compromise is inevitable, but the resulting tests—the end products of a long series of rearrangements—have proved remarkably uniform. In consequence, the scores in answers per minute may be considered as units along an absolute scale without serious error. The zero point of this scale is unknown in the sense that there is a great difference in the ability of two children, one of which has absolutely no ability to write answers to any combination, while the other is just not able to write one answer in the time allowed. But for practical school measurements both children actually have, at the time tested, zero ability in the trait being tested. Accepting this definition of the zero point, a score<sup>1</sup> of forty answers per minute will mean twice the ability that is denoted by a score of twenty answers per minute—just as truly as six feet denotes twice three feet. In measurements of change, also, from the fact that children's scores respond readily to practice it seems probable that the change from twenty answers per minute to twenty-five answers per minute corresponds to the change from forty-five answers per minute to fifty

<sup>1</sup> Throughout this report the word "Score" will be used to denote for any test the number of examples for which answers have been found and recorded in the time allowed. For tests Nos. 6, 7 and 8, the score may be either the total number of answers written regardless of whether they are right or wrong (attempts), or the number of correct answers written (rights).

answers per minute. That this would not be true at the extremes of the scale is conceded, but the child that is able to write answers at all usually has a score of four to eight answers, while no sign of an upper limit of ability has been found in any of the experimental work so far undertaken. For ordinary school work, therefore, and for the purposes of this investigation, the scores in these tests are regarded as measures along an absolute scale whose zero point is known. Similar reasoning holds for each of the other tests, and the point need not be discussed again.

### Speed Test No. 5; Copying Figures—Illustrated in Fig. V



*"Measure the efficiency of the entire school, not the individual ability of the few"*

SCORE	
No. attempted	_____
No. right	_____

#### ARITHMETIC—Test No. 5. Speed Test—Copying Figures

Name \_\_\_\_\_ School \_\_\_\_\_ Grade \_\_\_\_\_

Copy on this paper, in the space between the lines, as many of the printed figures as possible in the time allowed.  
Write as rapidly as possible, but form the figures as carefully as in working examples.

2 4 9 6 7   4 2 9 7 6   6 2 9 4 7   7 2 9 6 4   2 4 9 7 6   4 2 9 6 7   6 2 9 7 4   7 2 9 4 6

2 6 9 7 4   4 6 9 2 7   6 4 9 7 2   7 4 9 2 6   2 6 9 4 7   4 6 9 7 2   6 4 9 2 7   7 4 9 6 2

2 7 9 4 6   4 7 9 6 2   6 7 9 2 4   7 6 9 4 2   2 7 9 6 4   4 7 9 2 6   6 7 9 4 2   7 6 9 2 4

2 4 9 6 7   4 2 9 7 6   6 2 9 4 7   7 2 9 6 4   2 4 9 7 6   4 2 9 6 7   6 2 9 7 4   7 2 9 4 6

2 6 9 7 4   4 6 9 2 7   6 4 9 7 2   7 4 9 2 6   2 6 9 4 7   4 6 9 7 2   6 4 9 2 7   7 4 9 6 2

2 4 9 6 7   4 2 9 7 6   6 2 9 4 7   7 2 9 6 4   2 4 9 7 6   4 2 9 6 7   6 2 9 7 4   7 2 9 4 6

REPRINTED 1915, BY S. A. COURTES, 411 JOHN B. STREET DETROIT, MICH.  
ALL RIGHTS RESERVED

Fig. V\*

The purpose of this test is to determine the rate of motor activity, not how well or how poorly children can copy figures. The importance of this knowledge is shown by the following: Two girls in the same class obtain scores in, say, the subtraction test which are just half the value of the class average. In a test of their rates of copying figures, one equals the average rate of the class, but the second again makes a score half the class average. It is evident that the first girl failed in the subtraction test because she did not know the combinations. The second, however, even if she knew her combinations perfectly, could not have equaled the average score of the class because she was handicapped by her inability to make her fingers move at the average rate. For corrective work, the difference is fundamental.

It will be noted that the work of this test calls for a minimum of mental activity. Practically nothing is demanded except perception of the figures to be written, and the proper motor responses. As, however, the adult score is from 110-130 figures per minute, close and sustained attention must be given to the work. The results measure quite accurately the relative native ability of the children. Other things being equal, that individual who is able to expend energy at the greater rate has the greater ability. Also, in many cases, the results are an indication of the stage of development reached by the children, particularly in the lower grades. Scores much below, or in excess of, the grade average are often indications of retarded or advanced physical development.

Uniformity in this test was secured by repeated use of the same figures. Many experimental determinations of relative difficulty, based upon the time required to write the different figures, were made. For instance, it was found that, on the average, a person can write three figure 1's while he is writing one figure 5. The figures 2, 4, 6, 7 were selected as being the four of nearest average value; the 9 as a more difficult figure. In the different groups in the test, the 9 is always placed as the central figure of the five, in the belief that a rhythm might be established which would tend toward uniformity. About the 9 the other figures are grouped in every possible variation. The test as a whole has yielded consistent and satisfactory results.

#### Details of Test No. 6

In Fig. VI is shown Test No. 6, Speed Reasoning. It will be noted from the instructions that in this test no computations whatever are necessary. The abilities involved are mainly two: (1) Ability to read English understandingly, and (2) ability to decide upon the operation to be used in a given situation. It is extremely probable that a separate test for the first ability would prove of very great value. The child that is handicapped by his inability to read English comprehendingly cannot be brought up to standard in his ability to solve problems from a test without direct training in reading. Such a child, however, may be able to decide instantly and correctly upon the operation to be used, once the situation is grasped. For the present series of tests, however, it was deemed sufficient to measure the combined effects of these two abilities, leaving it to the teacher to determine the nature of the corrective work to be done in any particular case.

The test is uniform in the sense that (1) the four operations are each represented in each group of four examples; (2) each problem requires a single operation for its solution, and (3) the problems are closely the same length as to the space to be covered by the eyes in reading. The factors making for inequality are (1) inherent differences in the relative difficulties of the different operations;<sup>1</sup> (2) phrasing; (3)

<sup>1</sup> See page 533.



problems that may be easily read. For the third factor, it is evident that familiarity with the content of a problem will influence the length of time needed to grasp the situation presented. For this reason, problems were chosen whose content was judged "equally" familiar to the average city child. In regard to the fourth factor—variation in cue—little can be said. The writer is familiar with no study of the relative frequency of use, or of the relative force, of the various cues to be found in arithmetical problems. While, of course, the reasoning process in actual experiences is a process of adjustment to a given situation, reasoning work in arithmetic is too often a mere sensori-motor response to the stimulation of a certain word or phrase. In a large sense, this must always be true, and rightly so; but in a narrow sense the relative ability of two children in a reasoning test such as this may be determined, not by the true relative ability to reason, but by the difference in the number of times the children have met a particular cue. On this account the attempt has been made to avoid conventional cues and to present instead critical situations.

While the effects of these various unknown factors are believed to be small, this test and the other reasoning test—No. 8—to which the discussion above applies with even greater force, are likely to be the least uniform as to units, and the most difficult to reconstruct in different form. At the same time, these are the very tests in which alternative forms are most essential. Experimental and analytical work now under way may eventually throw light on the relative values of the various units, but, for the present discussion, in each of these tests the problems will be treated as of equal value.

#### Details of Test No. 7

Test No. 7, as shown in Fig. VII, is the most important and, from some points of view, the most complex of the series. The abilities tested are many; the more important are (1) knowledge and control of the forms and processes in the four operations; (2) knowledge and control of the fundamental combinations; (3) ability to "borrow and carry"; (4) ability to copy; (5) ability to follow instructions. The first two need no discussion, the third very little. In nearly all except the very simplest problems the necessity for borrowing and carrying exists. In the test provision is made for measuring the extent to which this factor affects the work. The first four examples involve no borrowing or carrying whatever. In the next seven the carrying is limited to small numbers—1, 2, etc. In the remaining examples larger amounts must be carried. A comparison of the number of examples attempted and right for the different groups gives at once a rough measure of the effects of these activities. The measure is approximate only, however, as the combinations used in the various examples differ; mistakes in the later examples may be due to the relatively greater diffi-



"Measure the efficiency of the entire school, not the individual ability of the few"

### ARITHMETIC—Test No. 7. Fundamentals

Name \_\_\_\_\_ School \_\_\_\_\_ Grade \_\_\_\_\_

In the blank space below, work as many of these examples as possible in the time allowed. Work them in order as numbered, writing each answer in the 'answer' column before commencing a new example. Do no work on any other paper.

SCORE	
No. attempted	_____
No. right	_____

Number	Operation	Example	Answer	Right
1	Addition	a $25 + 830 + 122 = \dots\dots$ (Write answer in this column) <del>or</del>		
		b $232 + 8021 + 703 + 3030 = \dots\dots\dots$		
2	Subtraction	a $5496 - 163 = \dots\dots\dots$		
		b $943276 - 812102 = \dots\dots\dots$		
3	Multiplication	$2012 \times 213 = \dots\dots\dots$		
4	Division	$158664 \div 132 = \dots\dots\dots$		
5	Addition	$6134 + 213 + 4800 + 6005 + 3050 + 474 = \dots\dots$		
6	Subtraction	$73210142 - 49676378 = \dots\dots\dots$		
7	Multiplication	$46508 \times 456 = \dots\dots\dots$		
8				
9	Division	$27217182 \div 6 = \dots\dots\dots$		
10	Division	$3127102 \div 463 = \dots\dots\dots$		
11				
12	Addition	{ $85586 + 69685 + 39397 + 95836 + 37768 +$ $69666 + 78888 + 54987 = \dots\dots\dots$		
13				
14	Subtraction	$15655431 - 5878675 = \dots\dots\dots$		
15	Multiplication	$78965 \times 678 = \dots\dots\dots$		
16				
17	Division	$44502486 \div 7 = \dots\dots\dots$		
18	Division	$5373003 \div 769 = \dots\dots\dots$		
19				

COPYRIGHTED 1916, BY S. A. COURTES, 441 JOHN B. STREET, DETROIT, MICH.  
ALL RIGHTS RESERVED

Fig. VII

culty of the combinations used. The fourth ability mentioned—ability to copy—is an important one in commercial work; at least, the foundation of rapid and accurate copying of lists of figures should be laid in the classroom. In taking the test, the child copies the figures of the examples on the blank paper provided as a part of the test sheet, arranging them in the proper position for work. Again, the answers, when found, are copied into the answer column. Analysis of the mistakes made shows inaccuracies and carelessnesses plainly. The last ability mentioned—ability to follow instructions—is tested at the same time. Failure to write answers in the answer column, failure to work the examples in order, and on the paper supplied, indicate an inability to pay attention to imposed details that would be troublesome, to say the least, in commercial work.

Uniformity in this test was difficult to secure. The plan followed is to allow one count for each item of the work in any example; i. e., copying a figure, thinking a subtraction (or a multiplication, etc.), carrying a figure, etc. The work was analyzed in minutest detail, and the



figures and work of each example so adjusted that the length of each was fifty counts, as nearly as possible. The division problems proved very long. These were eventually made 100 counts long, and credit given for two units on the scale. The length of the other examples was fixed accordingly, each example containing either 50 or 100 counts, and having a value of one or two units on the scale, as indicated by the numbering. As the tests are sometimes given to second and third-grade children, the first two examples were divided into two parts, that smaller examples within the abilities of the younger children might be provided, but in these cases the two answers together count for a single point.

It should be noted that normally, because of these peculiarities in the numbering and because a child was given credit only for examples completed, no scores of 10 examples attempted, 12 examples attempted, etc., would be given. The child that completed 10 examples must have completed 11 examples also. Practically, however, because a few children skipped examples here and there, such scores occur but they are sufficiently few in number to produce marked irregularities in the distributions of the scores for examples attempted. No such irregularities occur in the scores for examples right as there the scoring was point by point.

That the examples vary in difficulty for any one individual is conceded, but it is believed that they would be of equal value to that ideal individual who could add, subtract, multiply, divide, copy figures, and "borrow and carry" with equal facility. Practically the examples increase slightly in difficulty, it being more difficult for the average person to "carry" correctly large numbers than small; but here, as previously, no serious errors are made in the inferences drawn from the results, if the scores are regarded as equal units along an absolute scale.

The truth of the last statement has been shown by repeated tests of the same classes, and more specifically by the following experiment. Thirteen subjects—the examiners described below<sup>1</sup>—took the tests three times in ten days. They became very familiar with the examples and answers, but not familiar enough to remember all the actual work. In a final trial the time intervals of minutes were marked by the stroke of a bell. Each subject wrote a "T" in her work at the exact point where she happened to be at each stroke of the bell. In the final scoring, the number of examples and parts completed at the end of each minute were determined. As, however, an edition of Test No. 7, different from that of the tests of the New York schools, was used, the experiment was later repeated with the same edition. In this trial there were but seven subjects. The results from both trials are given in Table II and Fig. VIII.

<sup>1</sup> See page 420.

**Table II—Relation Between Time and Work Completed in Test No. 7, to Show Equality of Units**

		MINUTES								
		1	2	3	4	5	6	7	8	9
1ST TEST	SUBJECTS	NUMBER OF EXAMPLES COMPLETED								
	A.....	3.5	4.5	8.0	11.0	13.0	16.0	17.0	19.0	....
	B.....	2.0	4.3	6.0	8.0	10.0	11.5	12.5	14.0	16.0
	C.....	2.5	6.0	8.0	9.5	11.0	13.5	15.0	....	....
	D.....	2.0	4.0	5.0	7.0	9.0	10.0	12.0	14.0	15.7
	E.....	2.5	4.2	6.5	10.0	11.5	15.0	16.0	17.0	18.5
	F.....	2.5	5.5	8.5	9.5	10.5	13.5	14.5	16.5	18.0
	G.....	2.5	4.5	7.0	10.0	12.0	14.0	15.5	17.7	18.0
	H.....	2.3	5.0	7.0	7.5	7.9	10.0	11.5	13.8	16.0
	I.....	2.9	6.0	9.9	11.9	13.9	16.0	17.0	18.0	18.7
	J.....	2.2	4.0	6.0	8.0	10.0	12.0	13.0	15.0	16.0
	K.....	2.0	3.2	5.2	7.7	10.5	12.0	12.7	14.7	15.7
	L.....	2.0	6.0	7.2	8.7	9.7	10.7	12.2	13.0	....
M.....	2.0	3.7	5.0	6.0	8.2	11.0	11.7	16.0	17.5	
Average Number of Ex- amples Completed...		2.4	4.7	6.9	8.8	10.6	12.7	13.9	15.7	17.0
2ND TEST <sup>1</sup>	SUBJECTS	NUMBER OF EXAMPLES COMPLETED								
	H.....	2.7	4.7	6.8	8.0	9.8	10.6	11.4	12.9	13.3
	L.....	2.5	4.5	5.7	8.2	9.5	11.1	12.9	14.6	15.7
	N.....	2.5	4.0	6.5	9.0	12.0	13.2	15.5	17.2	18.4
	O.....	3.7	7.8	10.8	14.3	17.2	....	....	....	....
	P.....	2.0	4.1	5.8	8.1	10.0	12.0	13.7	15.0	16.8
	Q.....	2.8	4.9	7.8	10.7	11.3	13.9	15.8	17.3	....
	R.....	2.0	4.5	6.0	8.5	10.0	12.3	13.6	15.0	16.2
Average Number of Ex- amples Completed...		2.6	4.9	7.1	9.5	11.4	12.2	13.8	15.3	16.1

<sup>1</sup> The subjects were more familiar with one edition than the other.

In interpreting these results, however, it must be remembered that few individuals reach the ideal development called for in the assumptions upon which the equality of the units is based. Nevertheless, it will be seen that, except for the more difficult examples, the results are not widely different in the two trials, either in the comparison of the two editions of the test, or in the unit of either test. And part of the apparent irregularities must be ascribed to the small number in the groups, and to the elimination of the more rapid workers.

The length of the examples in this test has been frequently criticized. It must be remembered, however, that the ability in arithmetic, produced by school training, has been frequently attacked by the com-

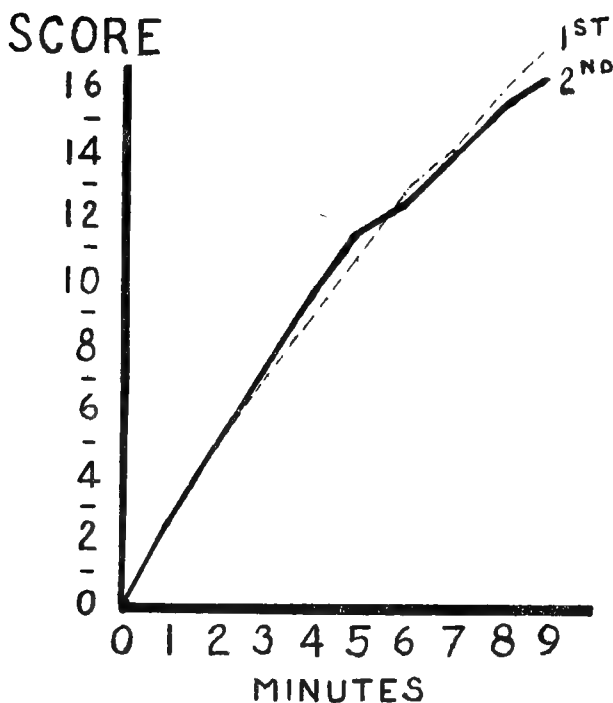


Fig. VIII

Relation between time and work completed in Test No. 7, showing approximate equality of units. First curve based upon average scores of thirteen subjects; the second on the average score of seven. Irregularities in both curves due to greater difficulty of the later examples and to the elimination of certain of the subjects.

mercial world; that endurance is one important factor in commercial work; and, finally, that choice must be made between a large number of small examples, or a smaller number of large examples. Perhaps the best answer that can be given is that 20.5 per cent. of the children in the fourth grade were able to complete the first eleven examples in the time allowed. For the rest, it only remains to be said that all grades were affected alike by this or by any other feature.

#### Details of Test No. 8

The final test—No. 8, Reasoning, shown in Fig. IX—has already been partially discussed in connection with Test No. 6. There are a few distinctive features, however. As each problem involves two operations the effect of phrasing, mentioned above, is even more marked here, where more complex situations must be presented. Each pair of problems is made to cover the four operations. The relative difficulty



***"Measure the efficiency of the entire school, not the individual ability of the few"***

## ARITHMETIC—Test No. 8. Reasoning

**SCORE**  
No. attempted \_\_\_\_\_  
No. right \_\_\_\_\_

Name \_\_\_\_\_ School \_\_\_\_\_ Grade \_\_\_\_\_

In the blank space below, work as many of the following examples as possible in the time allowed. **Work them in order as numbered, entering each answer in the "answer" column before commencing a new example. Do no work on any other paper.**

1. A party of children went from a school to a woods to gather nuts. The number found was but 205 so they bought 1955 nuts more from a farmer. The nuts were shared equally by the children and each received 45. How many children were there in the party?.....
2. One summer a farmer hired 43 boys to work in an apple orchard. There were 35 trees loaded with fruit and in 57 minutes each boy had picked 49 apples. If in the beginning the total number of apples on the trees was 19 677, how many were there still to be picked?.....
3. A girl found by careful counting that there were 87 letters more on a page of her history than on a page of her reader. She read 31 pages in each book in the first 29 days of school. How many more letters each day did she read in one book than in the other?.....
4. The children of a school made small boxes to be filled with candy and given as presents at a school party. 600 were needed. In 4 days grades 3 to 7 made 20, 25, 83, 150, and 150 boxes. The eighth grade agreed to make the rest. How many did the eighth grade make?.....
5. A girl's record in spelling for 5 days was 19, 18, 20, 16, and 20 words spelled correctly out of 20. If each of the 16 children in the grade had had the same record, what would have been the total number of words spelled correctly by that grade in 5 days?.....
6. A party of boys went on a long bicycle trip. They travelled 1702 miles in 37 days. A number of men then joined the party, and soon the party was travelling 58 miles per day. How much change in the number of miles ridden a day did the presence of the men make?.....
7. A teacher corrected 2400 arithmetic test papers. 2295 of these he marked "poor," "fair," "good," etc. All the others were marked "unsatisfactory." If each of the papers in this group had 47 mistakes, what was the total number of mistakes in the unsatisfactory papers?.....
8. In two schools five teachers recorded the number of blocks the children walked in going to and from school. The total for one school was 3000 blocks; for the other 2400. The number of children in both schools was 216. How many blocks did each child walk a day?.....

[illegible]

COPYRIGHTED, 1912, BY S. A. COURTIS, 441 JOHN R STREET, DETROIT, MICH.  
ALL RIGHTS RESERVED

Fig. IX

of the various couplings—addition-subtraction, addition-multiplication, etc.—is entirely unknown. Each problem involves computations of the same length, 50 counts, as those of Test No. 7, and, in this respect, the scores from this test are comparable with those of Test No. 7. The test thus affords, in connection with the results from No. 7, a basis for judging how far the attention to reasoning situations gives rise to strains under which the abilities tested in No. 7 break down. To further increase the complexity of the reasoning situations, as well as to test the ability of children to select the essential elements of problems, numbers which have nothing to do with the questions asked are introduced into every second problem. The effects of such complexities upon the relative values of the units are again entirely unknown.<sup>1</sup> However, as all the problems contain the same amount of reading matter, and as all the situations, while taken from actual situations familiar to the child, are quite unlike the conventional problems, it seems probable that, to the ideally trained individual, they would be of equal difficulty. In the absence of precise knowledge to the contrary, the scores are treated as representing units of equal value.

It should be remembered, however, that a large number of factors of unknown value make the results from this test less reliable quantita-

<sup>1</sup> See page 535.

tively and more difficult to interpret qualitatively than any of the others. That the test nevertheless has a value will be seen from the discussion below. And it can at least be said that the test has been carefully prepared with due regard for the existing knowledge of the elements of which it is composed. The writer believes it to be superior in all essential respects to all other tests that have been used as measures of the reasoning abilities of children in arithmetic. Nevertheless, much experimental work must be done before a really satisfactory test of this character can be constructed.

From the foregoing, it must be evident that the tests are scientific measures of the different abilities enumerated and are in no sense "examinations." The perfection of their present form was attained only through a long process of evolution, and of elimination of defects by trial in the classroom. And it is essentially this care in their construction which gives meaning to the results below and makes studies of relations between the abilities possible.

### Details of Record Sheet

As the tests were designed for general classroom use, many provisions for rapid and accurate scoring of results by the children are found in the papers. All tests carry in the upper right-hand corner a scorecard in which the child enters the number of answers written in the time al-



*"Measure the efficiency of the entire school, not the individual ability of the few"*

SCORE	
No. attempted	_____
No. right	_____

### COURTIS STANDARD TESTS

#### Record Sheet—Arithmetic

Name \_\_\_\_\_ Age last birthday \_\_\_\_\_ Room \_\_\_\_\_  
 School \_\_\_\_\_ Grade \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

#### SCORES

Speed Test—Fundamentals		Attempted	Right		Attempted	Right
1. Addition .....				5. Speed Test—copying figures		
2. Subtraction .....				6. Speed Test—reasoning .....		
3. Multiplication .....				7. Fundamentals .....		
4. Division .....				8. Reasoning .....		
Total of Tests No. 1 to 4....						

COPYRIGHTED, 1912, BY P. A. COURTIS, 441 JOHN B STREET, DETROIT, MICH.  
ALL RIGHTS RESERVED

Fig. X

lowed.<sup>1</sup> In Tests Nos. 1, 2, 3, 4, and 5, the spacing of the separate units into groups of five makes for rapid and accurate counting. In Tests Nos. 6, 7, and 8, the answers are written in an answer column, and are easily found and counted. The children also enter their scores for "Examples Attempted" in a record sheet, shown in Fig. X.

Provision is made on this sheet for recording other significant facts in regard to the children—names, ages, grades, etc. Sex was shown by boy or girl written above the name. The scoring not done by the child was completed by the teacher after the correction of the papers.

### Order in Which Tests Are Given

The tests were printed from plates, and bound by a small staple in the upper left-hand corner into sets as follows: Set 1—Record Sheet, Tests 5, 2, 8, 3; Set 2—Tests 4, 6, 1, 7. The order is that which experience has proved best. Test 5 was least influenced by the long exposure during the first giving of instructions. Test 2 was chosen to precede Test 8 as having the least influence upon it. Test 8 was given before the remaining tests that its results might not be influenced by them; Test 7, the other complex, was put last that it might be influenced by all alike. Of the remaining tests, No. 1 was put as late as possible because many children, having once added, find difficulty in immediately undertaking other speed tests. The tendency to add persists.

### Time Allowances

The time allowances for the various tests were as follows: Tests Nos. 1, 2, 3, 4, 5, and 6, one minute each; Test No. 7, twelve minutes; Test No. 8, six minutes. Although the total time allowed was but twenty-four minutes, the actual time required for testing of an average class, including passing of papers, giving of instructions, etc., was from sixty to eighty minutes. The division of the tests into two sets made it possible to give them in two school periods of forty minutes each. As a rule, the sets were given on successive days, but in some cases in the morning and afternoon of the same day. Work was done in pencil. No additional paper of any kind was used, the blank paper necessary being a part of the tests.

<sup>1</sup> For a discussion of the accuracy of the children's scoring, see page 430.

Table III.—Distribution of Completed Record Sheets by Boroughs, Grade and Sex (see page 418)

Grade	4A		4B		5A		5B		6A		6B	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Manhattan.....	473	692	607	659	614	734	718	826	595	783	533	794
Bronx.....	285	178	224	172	214	178	239	152	173	165	195	144
Brooklyn.....	485	471	607	530	482	515	592	583	591	556	572	581
Queens.....	64	71	71	76	60	43	43	88	73	30	67	60
Richmond.....	35	20	32	29	26	28	39	45	32	30	47	49
Totals.....	1,342	1,432	1,541	1,466	1,396	1,526	1,631	1,694	1,464	1,564	1,414	1,628

Grade	7A		7B		8A		8B		Totals		Grand Totals	Percent of total Enrollment Grades 4-8 inc.
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		
Manhattan.....	537	536	549	476	484	509	547	481	5,657	6,490	12,147	9.7%
Bronx.....	191	159	144	171	122	134	116	136	1,903	1,589	3,492	9.9
Brooklyn.....	462	437	446	476	501	474	495	387	5,233	5,010	10,243	8.9
Queens.....	65	17	62	45	24	66	44	48	573	572	1,145	4.5 <sup>2</sup>
Richmond.....	18	28	35	37	26	30	28	32	318	328	646	9.7
Totals.....	1,273	1,177	1,236	1,205	1,157	1,213	1,230	1,084	13,684	13,989	27,673	9.0

Grade	9A		9B		10A		10B		11A		11B		12A		12B		Totals		Grand Totals
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Morris High School..	44	64	22	24	19	37	22	40	23	37	22	39	21	38	18	43	191	322	513
Mott Ave. Annex....	55	113	31	87	22	61	15	41	14	16	7	21	..	..	..	..	144	339	483
Totals.....	99	177	53	111	41	98	37	81	37	53	29	60	21	38	18	43	335	661	996

<sup>1</sup> On basis of reports to Committee on School Inquiry, June 30, 1911.

<sup>2</sup> Examination of certain selected schools omitted owing to lack of time.

Section III

General Plan of the Investigation

Selection of Schools

The resources placed at the disposal of the writer for the purposes of the investigation and the short time in which the work had to be done made it necessary to limit the testing to certain schools and certain grades. After due consideration, it was decided to test one-tenth of the school population of grades 4-8, inclusive, and, in addition, one general and one commercial high school—approximately 33,000 children in all. To allow for loss through absences, failure to follow instructions, teachers' mistakes in scoring, etc., schools and classes were selected having a total register of 40,000. The actual number of children to whom the test was finally given was 33,350, and the resulting number of completed record sheets was 28,669, distributed as shown in Table III, p. 417.

Table IV—Distribution of Schools and Number of Classes Tested in Each

MANHATTAN		BRONX		BROOKLYN		QUEENS		RICHMOND	
School Number	Number of Classes	School Number	Number of Classes	School Number	Number of Classes	School Number	Number of Classes	School Number	Number of Classes
No.		No.		No.		No.		No.	
3	18	1	16	4	11	1	18	1	11
9	18	6	18	5	29	6	19	14	12
10 B & G	22	9	30	7	10	.....	.....	.....	.....
11	16	14	10	8	10	.....	.....	.....	.....
23	25	26	10	64	30	.....	.....	.....	.....
24	12	35	15	72	22	.....	.....	.....	.....
36	24	36	15	84B	21	.....	.....	.....	.....
43	24	Morris High	18	84G	11	.....	.....	.....	.....
46	32	Mott Av. Annex	16	90	6	.....	.....	.....	.....
52	5	.....	.....	92	27	.....	.....	.....	.....
56	16	.....	.....	97	6	.....	.....	.....	.....
58	10	.....	.....	105	6	.....	.....	.....	.....
65B	16	.....	.....	110	24	.....	.....	.....	.....
65G	13	.....	.....	132	12	.....	.....	.....	.....
69	23	.....	.....	144	27	.....	.....	.....	.....
79	13	.....	.....	149	25	.....	.....	.....	.....
104	14	.....	.....	160	15	.....	.....	.....	.....
132	27	.....	.....	164	23	.....	.....	.....	.....
159	18	.....	.....	.....	.....	.....	.....	.....	.....
166	18	.....	.....	.....	.....	.....	.....	.....	.....
190	16	.....	.....	.....	.....	.....	.....	.....	.....
Total No. 21	380	9	148	18	315	2	37	2	23

Total number of schools, 52.

Total number of classes, 903.



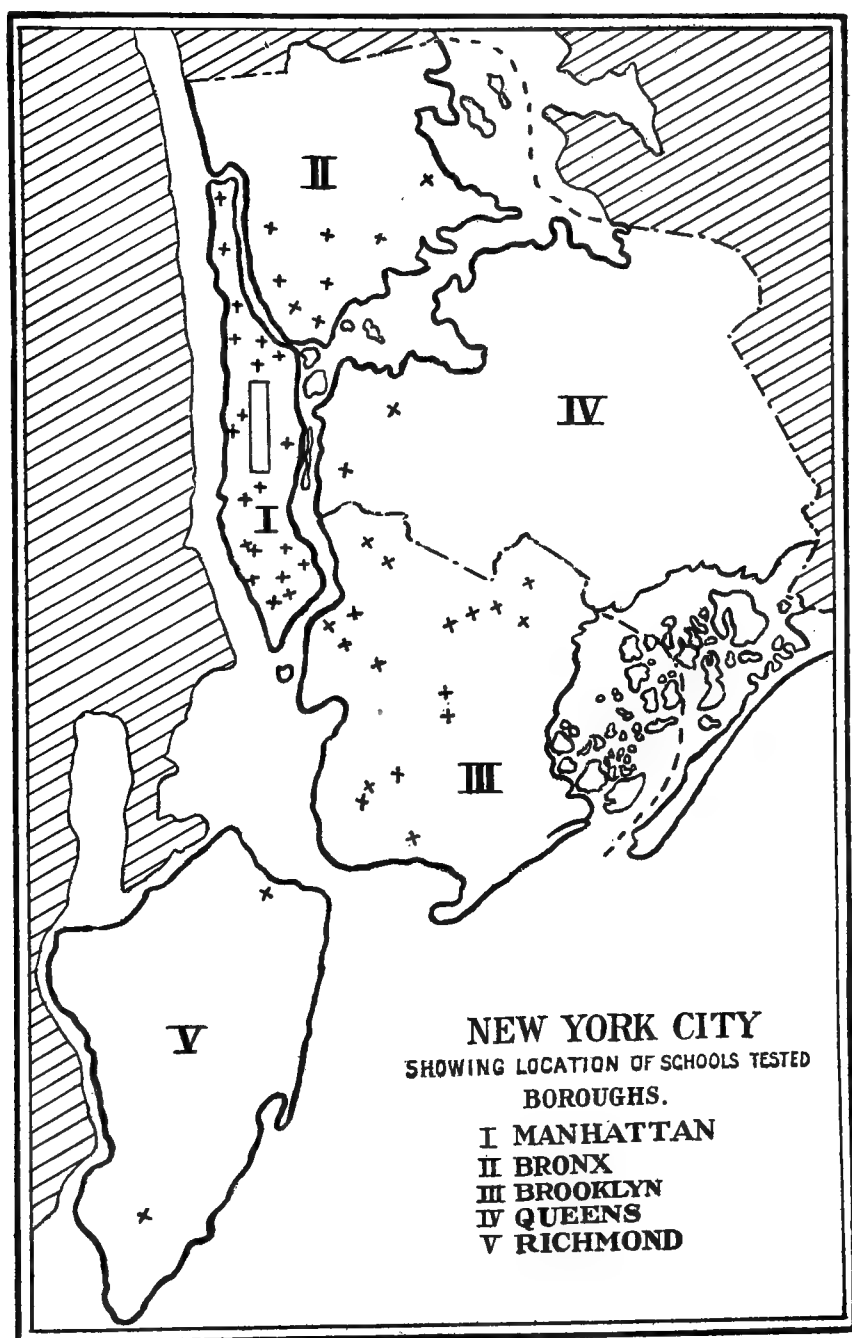


Fig. XI

Of the total number but 27,171 records are included in the general tabulations. The difference—1,507 records—is due to the rejection of the records of one entire school,<sup>1</sup> the exclusion of records from “E” classes, and of such other records as were found in the tabulations to contain impossible scores. (For instance, a score of 160 in a test in which there were but 120 examples.)

The basis for the selection of schools, while largely geographical, was practically a chance selection, as it was made without other knowledge of the schools than size, number of children and classes, and type—boys, girls, or mixed. In certain schools, every grade was tested; in others, only selected grades. The schools chosen and the number of classes in each are shown in Table IV, p. 418.

The geographical distribution of the schools is shown in Fig. XI.

### Relations with Principals

A list of the schools selected was sent to Superintendent Maxwell on March 11. A letter was at once addressed by the City Superintendent to each principal, notifying him of the proposed test, without giving details, and directing him and his teachers to give such assistance in the work of examination and scoring as might be necessary. To explain the nature of the investigation and of the assistance needed, the writer personally visited each school and discussed the work with the principal. Some were found already familiar with the tests through magazine articles or direct correspondence. In many cases, however, misunderstandings existed; but upon explanation of the real purposes of the work cordial relations were at once established. During the course of the investigation rumors reached the Committee that, in a part of Brooklyn and in certain schools in Manhattan, written copies of the tests had been passed from principal to principal, and that, in a few cases, the principals had availed themselves of this opportunity, and had carried on, through several weeks, active preparatory work, ranging from general reviews and drills to direct preparation on the specific tests to be used. The precautions taken to safeguard the results from the effects of such preparation are discussed below.

### Details in Regard to the Force of Examiners

The force of assistants supplied to act as examiners was drawn from the unassigned substitute teacher list. But one male substitute was secured. Many of the girls had been given the tests the year before in the training school and were already familiar with the general procedure. They proved quick to learn, enthusiastic, and resourceful, and that the plans of the investigation were so completely carried out is due in large part to their careful work. From the standpoint of their own prepara-

<sup>1</sup> See page 429.

tion for teaching, the experience was a good one, and if similar studies were included as a part of the regular training course, much valuable work along such lines could be accomplished every year at slight expense.

The total number of examiners employed was eighteen. Not all of these served the whole time, however, as several were appointed to positions during the period of examination. The bulk of the work of examination was done by fourteen persons. The period of examination extended from Friday, March 15, to Friday, April 26, not, of course, including the spring vacation, April 1 to 5. No tests were given in the elementary schools on the three days immediately following vacation, this time being devoted to the tests of the high schools, on the theory that the ability of the older children was less likely to be affected by the vacation period.

### Details in Regard to the Procedure in Examinations

An examiner, on entering a room for work, explained the nature of the tests to the children, cautioned them against looking at the papers until told to do so, and, with the assistance of the children, distributed the sets of tests. When all were supplied, the children, under the guidance of the examiner, filled out the blanks in the heading, writing boy or girl above their names, recording their ages at last birthday, the number of the school and its borough, the grade, room number, day of month and week, and the nearest even hour. This completed, the sheet was torn off and placed at one side of the desk.

In preparing the children for the first test, No. 5, Copying Figures, the instructions printed on the test were read aloud in concert by the class and examiner and then repeated, with explanations by the examiner alone. Opportunity was given for questions by the children as to the meaning of the instructions.

The children were told that the same tests were being given in other classes and other schools and were urged to do their best for the honor of the school.

The necessity for all commencing work at the same time and stopping at the same time was explained and the workings of a mechanical timing device demonstrated. The children were taught to turn the tests face down, retaining hold of the papers with their left hands, so that they would be able to turn them over on receiving the signal to begin. At the same time they raised their pencil hands in the air as if they were going to ask a question. Then, at a stroke of the bell from the timer, the papers were turned over and the work begun. At a second stroke of the bell, work stopped, the examiner making sure that all did actually stop by requiring that the pencil hands be raised again.

Under the examiner's direction the children counted the number of answers, writing it in the scorecard on the test and on the record sheet. The examiner then asked those who had a score of more than 100, 90, 80,

etc., to stand, and chose from these the one having the highest score. The name and score of this child were written on the board by the teacher. Then the blanks on the tests for "name" and "grade" were filled out, the sheet torn off and placed under the record sheet, the other papers being kept face down, except at times when instructions were being read, etc. Exactly similar procedure was followed with the remaining tests with such slight variations in timing and instructions as were made necessary by the differences in the tests. At the close of the first period the papers were fastened with a clip and taken up carefully in order, so that they were easily distributed with the second set at the second visit. At the close of the second visit, the papers were arranged by the children in order of number, and fastened together with a clip.

### Details in Regard to the Scoring

The bundles of papers from the different grades were stored with the principal until such later time as was convenient for an examiner to meet with the teachers. Then printed instructions for scoring the papers, and a printed answer card for checking examples right, were given to each teacher. The instructions were gone over carefully by the examiner, following which the teachers worked on the papers in the room with the examiners for periods varying from fifteen minutes to an hour. The examiner herself corrected, in every school, the papers from at least one grade and answered any questions necessary to further explain the instructions.

The scoring of the various papers has been partially explained above. It will be remembered that in Tests Nos. 1 to 5 the scores represent the number of answers written per minute; in Tests Nos. 6, 7, and 8 the number of examples attempted and the number right. No scoring of rights in Tests 1 to 4 was made, as experience has shown that the mistakes, except in the zero combinations in multiplication and the zero and one combinations in division, are too few in number to pay for the labor expended. The sight of two figures in position for addition, for instance, serves as a stimulus to which the habitual response must be made, if any. That is, a child that does not know his tables is apparently unable to make up and write any answer. Caught in the grip of a situation to which he has previously made response, he apparently must go through some habitual process of recall before he can even write an incorrect answer. In fact, so powerful is the grip of habit that most children persist until the right answer is recalled, ignorance of the tables being shown, not by incorrect answers, but by low scores. For instance, in an examination of 3,084 papers of Tests 1-4, a total of 126,589 answers were written, of which 3,780 (not including exceptions noted above) were wrong, the rights being 97 per cent. Errors were greatest in multiplication (4.8 per cent. of multiplication answers written); second, in division (4.2 per cent.); third, in addition (1.99 per

cent.); and least in subtraction (1.8 per cent.). The teacher did, however, for Tests 1-5, carefully check the score written by the children, and also made sure that the right operation had been performed in each case. In the remaining tests, the scores for number of examples right when found by the teacher were also entered on the record sheet. The total of scores in Tests 1-4 was also found for each complete record sheet. The complete and incomplete record sheets from a school were put into separate bundles.

### Details in Regard to the Tabulation

The completed record sheets were delivered to the Statistical Service Company and by them cards were punched to show the data of the record sheets, and these were tabulated by machinery. The papers from certain schools were analyzed as to the character of mistakes made, and certain minor tabulations were completed by an office force working under close supervision. For the most part, schemes of analysis and tabulation have followed closely the printed directions found in the Manual of Instructions for Giving and Scoring the Tests, and will not be repeated here. The data from the same will be found below.

## Section IV

### Validity of Results

The validity of the conclusions reached in an investigation of this character is directly dependent upon the reliability of the data secured. Therefore, the precautions taken to insure uniformity of conditions and to determine the degree of dependence to be placed upon the results will now be discussed in detail. The factors contributing to the reliability of the results are (1) uniform tests, (2) uniform conditions in giving the tests, (3) uniform scoring of papers, (4) accuracy in scoring, and (5) accuracy in tabulation. Each of these will be discussed in turn.

### Uniform Tests

The question of uniformity of tests has been fully discussed in connection with the nature and construction of the tests; it remains but to add that, in the use of these tests by many schools, uniform and consistent results have repeatedly been obtained. One of the first questions that is likely to arise in the mind of any person considering such educational measurements for the first time is whether or not a repetition of the tests after an interval of a few days would yield results at all comparable with those from the first test; whether, in other words, educational products have a sufficiently concrete and constant existence to be susceptible

of measurement in the sense in which material objects are measured. This question the writer has already discussed in detail elsewhere;<sup>1</sup> and the evidence which proves that, for all groups of any size and for many individuals, constant results are obtained in repeated measurements, will not be repeated here. A single illustration is given in this report. In Fig. LII, page 534,<sup>2</sup> are shown the scores of three individuals measured in their abilities in Test No. 3 (multiplication) at intervals over a period of three school years. The records are random selections from one grade in the Liggett School, through the courtesy of the principals, the Misses Liggett. It will be seen that, in spite of fluctuations due to the various influences at work—class drill, vacation, etc.—only minor variations occur in these measurements repeated at short intervals.

### Uniform Conditions During Examinations

Second only in importance to uniformity in the tests themselves, uniformity in the conditions under which the examinations are conducted is essential to legitimate comparison of results from grade to grade, and from school to school. But since uniformity in this respect is dependent upon the behavior of human agents, absolute uniformity is out of the question. The most that can be done is to reduce the amount of variation to a minimum through control of the various factors influencing the result. These were (1) timing, (2) the preparation of the examiners, and (3) the preparation of the children.

### Timing

Of the various factors directly within the control of the examiner, variations in timing are certain to have the greatest effects. In this investigation, resort was had to mechanical timing. Each examiner was furnished with an electric timing device in which, upon the closing of a switch, a bell was sounded once a minute by clockwork. As previously noted, the actual work upon each paper was commenced and ended at the stroke of the bell. In the longer intervals for tests Nos. 7 and 8, the examiner turned off the switch immediately after the beginning of a test, set the hands of the clock exactly at the even hour or half hour, so that the number of minutes elapsing might be directly indicated by the clock, and then from half to three-quarters of a minute before the end of the interval turned on the switch so that the closing signal and the exact length of the period were determined by the clock. In two cases the apparatus broke down, and for part of the day the timing was done with an ordinary watch, but, in the data as a whole, errors due to timing need not be considered.

<sup>1</sup> *The Elementary School Teacher*, Vol. XI, No. 10, June, 1911.

<sup>2</sup> See also p. 460.

### Training of Examiners

Under ideal conditions, the same test would be given to all the children at one time by one examiner. Practically, however, it was necessary to employ many examiners, as noted above, and the period of examination extended over many days. Under such conditions, uniformity in the work of the examiners becomes an important factor, and the examiners were carefully trained for their work. The first day was devoted wholly to mastering the procedure and to practice. The writer personally gave the tests to the examiners exactly as if they had been a class of children. Then a printed folder of directions was given to each one for study. Later in the day, each of the examiners gave a test in turn, criticism and discussion following each attempt. After a night of study and practice at home, the entire force gathered at the first school, and, with the writer acting as examiner, they took the tests with the children. Each examiner was then assigned a room for examination, and the writer passed from room to room, critically supervising the work. For several days, the entire force was kept working in single schools until it became evident that conditions had become settled. Then the force was divided among the different boroughs and schools, from one to four examiners being sent to a school at one time. Each new examiner taken on was required, after study of the printed instructions, to spend a day taking the tests with the children in rooms being examined by those of the force already trained. Frequent inspection at intervals during the period of examination was also made both by the writer, by other members of the Committee, and by at least one outsider, Professor Stuart H. Rowe, of the Wadleigh High School, whose report to his superintendent, Mr. Stevens, describes his visit of inspection and commends the examinations he witnessed.

The total number of "examiner days" was 267. As 903 classes were visited twice, this corresponds to an average for each examiner of 6.8 tests a day. The number of times the instructions for the entire series were repeated by any one examiner varied from eighty to twelve, averaging fifty times for all. It will be seen, therefore, that, together with the careful initial training, the work itself tended through mere repetition toward uniformity of conditions.

### Answering of Questions

In the account of the giving of the tests (page 421) it will be noted that provision was made for the answering of children's questions by the examiners. The instructions given to the examiners were that they were to be very guarded in the questions they answered. In the school room it is the common practice of teachers to get as much as possible from every child, but for the purposes of this investigation it was de-

sired to measure the response of the children to a uniform stimulus. On the other hand, experience has shown that classes differ markedly in their abilities to take oral instructions. As the abilities to be measured were arithmetical, the complication of "response to oral instructions" could only be removed by modifying the situation. From one point of view, therefore, the situation created was not uniform from grade to grade. Questions were answered by the examiners until, *in their judgment*, the room generally had grasped the meaning of the instructions given. It is particularly to be noted, however, that this point was carefully gone over with the examiners; that the questions asked concerned merely the method of the child's performance, and in no way influenced the achievement; that all cases of failure to follow directions were ultimately discarded, and, finally, that the small range of variation in the grade averages proves the precautions taken to have been effective.<sup>1</sup> Practically few questions were asked.

### Effect of Personality

A further factor to be considered is the difference in the stimulus of the situation created, due to the personality of the examiner. A vigorous, snappy presentation by an examiner in full control of a room would, unquestionably, arouse keener interest and call out greater effort than that of a weak personality. The effect of this factor is entirely unknown. As it was difficult to secure a sufficient number of examiners, there was little chance for selection among those who applied. It should be remembered, however, that selection of one sort had already been made, that the examiners were all from New York, were already familiar, through practical teaching experience, with the classrooms and children in the schools tested, had all received the same professional training, and were closely of the same grade of ability, as determined by their marks in the training school, and, finally, that no gross inequalities in their work as examiners were observed. The effects of the factor "personality" were at least reduced to a minimum.

### Checks

As a check upon the uniformity of work of the examiners, a study was made of the complete and incomplete record sheets from the first school examined, the one in which any lack of uniformity would be most evident. Of 33,350 children examined, there were 4,672 record sheets upon which one or more scores were missing. In 3,099 of these, the causes were absence of the child for part of the day, mistakes of the scorers, etc.; i. e., causes not due to the work of the examiners. In 1,573 record sheets, the cause, however, was failure of the child to follow instructions. This may or may not be due to the faulty explanations

<sup>1</sup> See page 453.



of the examiner; but, where a number of children fail to follow instructions in the same test, the cause is likely to be in the examiner and not in the children. In Table V the work of the different examiners for the day is compared. The total number of children tested is given, also the number, and per cent. of the total, of the papers in which the child has used the wrong operation, and the number of the tests.

**Table V—Uniformity of Conditions During Examinations**  
Analysis of Incomplete Papers from First School Examined

Examiner	Number of Children Examined	Number of Incomplete Papers	Per Cent. Incomplete	Number Not Following Instructions	Per Cent. Not Following Instructions	Test-Number of Tests in Which the Wrong Operation Was Used
A	53	3	5.6	0	....	
B	56	3	5.4	3	5.4	5, 6, 7, 8, 2, 7, 8
C	57	13	22.8	0	10.5	3, 6, 6, 6, 6, 6
D	66	5	7.6	0	....	
E	62	7	11.3	4	6.5	2, 3, 6, 5
F	33	2	6.1	0	....	
G	67	9	13.4	4	6.0	2, 2, 3, 6
H	42	1	2.4	1	2.4	5
I	39	6	15.4	6	15.4	5, 5, 5, 5, 5, 5
J	76	5	6.6	5	6.6	6, 6, 6, 6, 6
.....	551	54	9.7	29	5.3	.....

It will be seen that, with the exception of examiners C, I, and J, the results are satisfactory. A few children in each room will, quite generally, fail to follow instructions, and the explanations ought not to be continued until *all* understood. In the final totals, 4.7 per cent. of the total number of records were incomplete from this cause. In the case of Examiner "I," however, that 15 per cent. of the class should fail to follow instructions in test No. 5 is proof that the children were hurried. Checking of later tests, conducted by this and the other examiners, proved that this difficulty was soon overcome. From observation of the work of examination, and from checking of the results, therefore, the work of the examiners was kept at least to a practical uniformity.

### Preparation of Classes

Still another factor to be considered is the effect of variations in the preparations of the children for the tests. This was of two types—legitimate and illegitimate. The variation from school to school in the attention given to arithmetic was marked. In some schools the arithmetical work was at a minimum, unassigned time and the energies of both teachers and principal being given to other subjects in the curriculum. At the other extreme were schools in which arithmetic was the

avored subject. Here the regular use of "speed tests," "straight-ahead" work, and the like, constitutes a legitimate preparation for the tests of the investigation. The children in such schools, entirely apart from the effects of such work on their abilities, are accustomed to paying attention to directions, to commencing work promptly on a given signal, etc., all of which would tend to increase their scores. No reliable measure<sup>1</sup> of the effect of such preparation can be obtained, nor is it needed. The qualities of alertness, promptness, and so on, in arithmetic, may make for "general efficiency" and the higher scores shown by such schools over their neighbors, where such difference exists, may well be credited to method. In response to a questionnaire, forty-eight schools, or 92 per cent., report the use of speed tests, or similar practice work, as a regular part of school procedure—50 per cent. making use of the same daily.

### Illegitimate Preparation

Of quite a different character, however, might be the effect of the illegitimate preparations, that, it was rumored, were carried on through several weeks by a few principals and teachers. Here a high score would not denote real ability, but a deceptive imitation, due to "cramming." Fortunately, the fact that, for most tests, the abilities tested have been slowly built up, through years of practice, and are susceptible to no sudden change, removes the possibility of great deception being practiced. If the giving of the tests once, or twenty times, would generate the abilities they are designed to measure, no better argument for their general adoption could be found. In tests Nos. 6 and 8, however, the effects of cramming are to change the situation entirely. In legitimate work, a large part of the effort must be expended, as has already been pointed out, in getting the meaning of the words. Cramming removes the necessity for this effort. Moreover, the examples completed are few in number, so that the answers are easily memorized. In these tests, a high score, due to special preparation, does not mean ability to solve other problems of the same kind.

It was unfortunate, to say the least, that it was needful to consider at all the question of the effects of illegitimate preparation. However, as the question was raised, two important consequences have resulted: (1) careful tabulation of all returns by individual classes, and close scrutiny of the resulting averages, to detect abnormally high scores, or irregularities in the distributions within the classes, and (2) attempted measurement of the effects of such preparation. For the first, it can be said that little trace of irregularities was found. The class averages of one school

<sup>1</sup> It is known, however, that, in the speed tests, a second trial immediately after the first shows on the average an increase in score of about 12 per cent. As this is almost wholly due to familiarity with the procedure, etc., it is probable that the effect of legitimate preparation, aside from the benefit of the drill (if any), would be within this figure.

were abnormally high, and its results were rejected altogether.<sup>1</sup> For the most part, however, it is probable that the scores in those schools, of which the principals were sufficiently afraid of the tests to make special preparation, would not have been high, and the effect of the special work, if any, was not sufficient to raise the averages of the school above the general level. It is extremely probable that the effects of such special preparations are negligible. At most, because of the small amount of increase in score, and, because of the few causes in which special preparation was suspected, the net effects would be to make the general results slightly better than actual conditions. A comparison of the average standing of the first five schools examined with that of the last five does not reveal any marked difference in the scores. Sixty-three per cent. of the grade averages of the first group, and 42 per cent. of the other, fall above the average score for all the schools examined.

In view of the possible effects of cramming, a measurement of a specific case becomes of interest. A Brooklyn school was selected for a test case. Rumors, and several suspicious circumstances, had made it practically certain that some preparation had been attempted in the school—how much, of course, could not be learned. The measurement of the resulting effects was possible, however, since, at the present time, two editions of the Courtis tests have been published, the care taken in their construction making it possible to construct other tests of exactly equal value (with the exceptions previously noted), but different in every figure. In testing the school in question, half of each class was given tests of the first edition, and the other half of the second edition. Tabulation of the results gave the following data:

**Table VI—Effect of Special Preparation**

Comparison of the scores of one section of each of the classes of a school with the score of the other section. One section was given copies of the first edition of the tests, the other section, copies of the second edition, both sections being tested at one time.

GRADES	4	5	6	7	8	TOTALS
First Edition.....	13 H	7 H	16 H	17 H	13 H	66 H
Second Edition .....	12 H	11 H	14 H	14 H	17 H	68 H
Total.....	25	18	30	31	30	144

H means higher score. The figures indicate the number of times, i. e., out of twenty-five tests of the 4th grade classes, the scores from the first edition were slightly higher in thirteen cases.

<sup>1</sup> The basis for this action was (1) abnormally high scores; (2) the report of the examiners that in giving Test No. 8, Reasoning, in the first set, the children quite generally followed the procedure for Test No. 6, Speed Reasoning, in the second set, instruction for which had not yet been given; (3) the testimony of a child in the school. One of the examiners engaged in settlement work reported that, upon showing a copy of the tests to a group of boys, one from the school remarked that they were practicing with those every day.

The results in the last column of the table show that the effect of special general practice is practically negligible. In Test 7, for example, the maximum effect found in any class was a difference in score of three examples. The number of cases of marked difference was seventeen, out of a possible 144. A few teachers seem to have given a little practice on certain tests, but, as a whole, the effects of the practice were too slight to warrant further tabulation of the data. This does not mean at all that effective preparation for such a test could not be made; merely, that such preparation as was made, in ignorance of the purpose of the tests and the method of testing, was not a source of serious error in our conclusions.

### Uniformity of Scoring

Given uniform tests, and uniform conditions during the testing, the results may still be unreliable through lack of uniformity, or through inaccuracy, in the scoring. Equal care, therefore, was taken with these phases of the work. Uniformity was secured through simplicity of scoring, through the use of printed directions, covering every point of the work, and by having the teacher's first scoring done in the presence of a trained examiner, able to explain authoritatively the correct scoring in all doubtful cases.

### Accuracy of Scoring

The accuracy of the scoring was tested in several ways. As has already been noted, the papers were, for most of the tests, first scored by the children. The accuracy of this scoring, as determined by careful checking of more than 2,000 papers, was over 92 per cent.,—i. e., of 14,345 scores examined, 1,129 mistakes were made. The effect of these errors would be trifling. In 982 cases the amount of the error was so slight that it would not displace the child's score two divisions from its proper place in the class distributions. A little more than 1 per cent. of the scores were seriously incorrect. To decrease even this small amount of error, however, the teachers were required to look over and check the children's scores. The final scores, as tabulated, represent truly, therefore, the actual scores made.

### Checks

The entrusting of the scoring of "examples right" to the teachers might be thought to open the way for many errors of carelessness and dishonesty to creep into the results. It is believed, however, that this was not the case. The scoring consisted in checking, from a printed answer card, the answers right or wrong, written by the child in the "answer column" on the paper, and counting the number of answers right. The printed instructions, and the personal assistance given each teacher, made it possible to keep conditions strictly uniform. But, to

make certain, two precautions were taken: (1) At least one grade<sup>1</sup> in each school, and often more, was corrected by the force of trained examiners, and (2) the teachers' scoring was checked in a sufficient number of cases, in every school, to determine the general accuracy of such work. For instance, fifty-four teachers, in recording 10,624 scores, made 639 errors, mainly in Test No. 7, an inaccuracy of 6 per cent. But the careless and inefficient person is found in the teaching force, as elsewhere, and twelve other teachers, in recording 3,850 scores, made 881 errors, an inaccuracy of 23 per cent. In these classes the papers were re-scored. The effect of such carelessness is, however, not as serious in the general result as might be supposed. One class, in which an excessive number of errors in scoring had been made, was tabulated both before and after the papers had been re-scored. In no test, however, was the grade average raised by the errors more than part of one division of the scale, the errors being about as often against the child as for it. About 18 per cent. of the teachers were found to be careless or inefficient in scoring, which in itself is a measure of one phase of the administrative efficiency of the system. Little trace of dishonest scoring was found. These results prove that subdivision of the work of scoring among teachers of a school system is, with the proper safeguards, a practical expedient. It is not contended that the results are comparable with those where all the scoring is done by a small trained force. In the latter case, however, the labor expense of such scoring, in an investigation of any size, is very large—large enough, at any rate, to make the cost of the general use of comparative tests as a practical measure of school efficiency prohibitive. But, by proper organization, proper training of teachers, and sufficient checking, much systematic work of this character could be done at small cost—work that would be of the greatest value to all concerned.

All other scoring and analysis of mistakes referred to in the following pages was done by a few trained individuals in the office of the Committee, under conditions that permitted close supervision. Such results are essentially uniform throughout.

### Accuracy of Tabulations

All the general tabulations, referred to below, were made by the Statistical Service Company, of New York City, by means of its tabulating machinery, using punched cards of record. A possible source of error existed in the punching by which the records were transferred from the written record sheets to the special cards used in the tabulations. As, however, two cards were punched for each record, one by each of two operators independently, the two cards for each record being of different colors, it was possible to superpose the cards and hold them to the light. Any failure of the holes in the two cards to "register" was

<sup>1</sup> The seventh grade in all schools.

then evident, so that errors from this source, of which there were many, were thus completely eliminated.

Although the work of the sorting and tabulating machines is mechanically perfect, in the beginning of any series of tabulations on new material, errors, due to misunderstandings upon the part of the operators, are possible. To check the work of tabulation, therefore, two entire schools were tabulated carefully by hand. As a result, it was possible to detect the slightest error in the work and the tables below may be taken as practically perfect tabulations of the data secured from the tests.

### Computations

Throughout the discussions that follow, the exact average is used as a measure of central tendency. The reasons for this are many: (1) The distributions are either normal or slightly skewed, so that average, median, and mode have closely the same values; (2) the average is the measure most readily comprehended by the general public; (3) the results from the mechanical tabulations made the average the measure most easily computed. Where average deviations are given, they have been computed by the approximate method,<sup>1</sup> as have also a few averages that were not included in the general tabulations.

### Effect of Rejecting Certain Records

Of the 33,350 children tested, the records from but 27,171 are included in the tabulations below, as previously explained. Only the scores from record sheets, complete in every detail, were transferred to the punched cards. Of the 4,672 incomplete record sheets, 1,984, or 42 per cent., were lacking in one or more scores, through absence at one or the other of the times when the tests were given; 1,573, or 34 per cent., from failure to follow instructions; and 1,115, or 24 per cent. of the total, from loss of a paper, failure of teacher to record a score, etc. It is evident that the removal of so many thousand records from the total might seriously raise or lower the general averages, if the children were markedly able or inferior in ability. A table, showing in detail the average scores of these children by grades, has been filed with the Committee. It is enough to say here that this source of error has been considered, and that its effect, though insignificant, is to raise slightly the apparent standard of achievement.

### Summary

By way of summary, therefore, it is possible to say that, with full knowledge of the many sources of errors likely to affect the returns, conscientious effort has been made to safeguard the uniformity of condi-

<sup>1</sup> Thorndike, *Mental and Social Measurements*, page 71.

tions and the accuracy of the scoring and tabulations. It is probable that the results reflect accurately the actual abilities of the children in the traits covered by these tests; and that precisely similar results would be obtained if the tests were repeated at the same time, and under the same conditions, a year later. In other words, the data are as reliable as it was practicable to make them, under existing conditions.

## Section V

### Results

#### Individual Variation

##### Summary and Introduction

From the foregoing it will be seen that 33,350 children, in 903 classes, in fifty-two New York public schools, have been measured in respect to seventeen distinct, but related, traits, under conditions of rigid uniformity, and the results scored and tabulated with a high degree of accuracy. Turning now to a consideration of the results, the reader should mentally review his conceptions of the meaning of efficiency as applied to arithmetical training in the public school. It should be remembered that children usually enter school at about six years of age, and, from the very first, are subjected to training in number work. At the time the tests were given, the children in the lowest grades tested had had four years of training and were well on toward the end of the work on the four processes. It should be remembered, further, that, in this progress through the school, the children are twice a year passed upon as to growth in ability, and in fitness for the work of the next higher grade. Finally, the reader should marshal his ideas as to the meaning of "promotion" and "grade" from the standpoints of growth and efficiency. Then, and not till then, is he ready to give due consideration to the results obtained.

#### A Typical Result

In Table VII are given the distributions of 27,171 individual scores in Test No. 7, both "attempts" and "rights" by whole grades.<sup>1</sup> The total number of children in each grade, and the average score for the grade, are also given.

<sup>1</sup> Throughout the report the word grade, unqualified, will be used to denote the children in both the A and B classes of any year, and includes both girls and boys.

Table VII<sup>1</sup>

SCORE <sup>4</sup>	NUMBER OF CHILDREN MAKING SCORE <sup>4</sup>									
	4th Grade		5th Grade		6th Grade		7th Grade		8th Grade	
	At-tempted	Right	At-tempted	Right	At-tempted	Right	At-tempted	Right	At-tempted	Right
19	147	1	210	1	288	3	487	14	994	31
18	.... <sup>c</sup>	....	....	....	....	....	....	....	10	25
17	49	1	165	3	331	10	570	24	914	86
16	59	1	151	6	303	17	413	37	461	107
15	16 <sup>3</sup>	....	32	6	106	30	114	77	135	182
14	84	....	344	21	655	62	711	120	758	251
13	187	6	499	34	799	106	650	173	438	327
12	38 <sup>3</sup>	9	93	61	151	134	132	262	86	390
11	528	31	1,212	136	1,370	304	966	367	489	453
10	118	42	169	198	168	358	86	456	40	497
9	1,296	132	1,614	405	997	505	434	553	124	475
8	956	280	677	558	256	647	106	638	30	425
7	175 <sup>3</sup>	405	104	625	39	685	14	500	7	333
6	737	487	245	713	101	620	30	447	9	312
5	412	645	148	738	45	571	10	384	3	239
4	245	661	67	667	29	494	5	254	....	152
3	189	690	42	524	17	388	3	184	2	88
2	93	654	31	471	7	306	3	142	2	71
1	38	628	19	334	4	203	2	96	....	30
0	29	723	14	335	4	227	2	43	....	28
Total No. . .	5,396	5,396	5,836	5,836	5,670	5,670	4,771	4,771	4,502	4,502
Average Score. .	8.8	4.2	10.9	5.8	12.5	7.0	14.0	8.5	15.7	10.1

SCORE <sup>4</sup>	NUMBER OF CHILDREN MAKING SCORE <sup>4</sup>							
	9th Grade <sup>2</sup>		10th Grade <sup>2</sup>		11th Grade <sup>2</sup>		12th Grade <sup>2</sup>	
	Attempted	Right	Attempted	Right	Attempted	Right	Attempted	Right
19	64	4	49	3	37	3	24	....
18	3	....	1	2	2	....	....	1
17	115	9	79	7	45	4	36	1
16	49	13	22	12	12	6	11	6
15	21	20	14	14	8	12	3	3
14	79	32	40	23	18	9	19	10
13	43	47	22	26	13	16	10	12
12	6	50	6	20	2	15	1	17
11	42	46	16	35	18	9	13	17
10	4	53	....	33	....	12	....	7
9	12	36	7	27	20	27	2	17
8	1	50	1	22	3	19	....	8
7	1	20	....	10	....	17	....	6
6	....	24	....	11	....	14	1	6
5	....	16	....	10	1	8	....	5
4	....	9	....	....	....	4	....	2
3	....	2	....	1	....	4	....	....
2	....	6	....	1	....	....	....	1
1	....	2	....	....	....	....	....	1
0	....	1	....	....	....	....	....	....
Total No. . .	440	440	257	257	179	179	120	120
Average Score. .	15.7	10.9	16.1	11.5	15.4	10.5	16.0	11.0

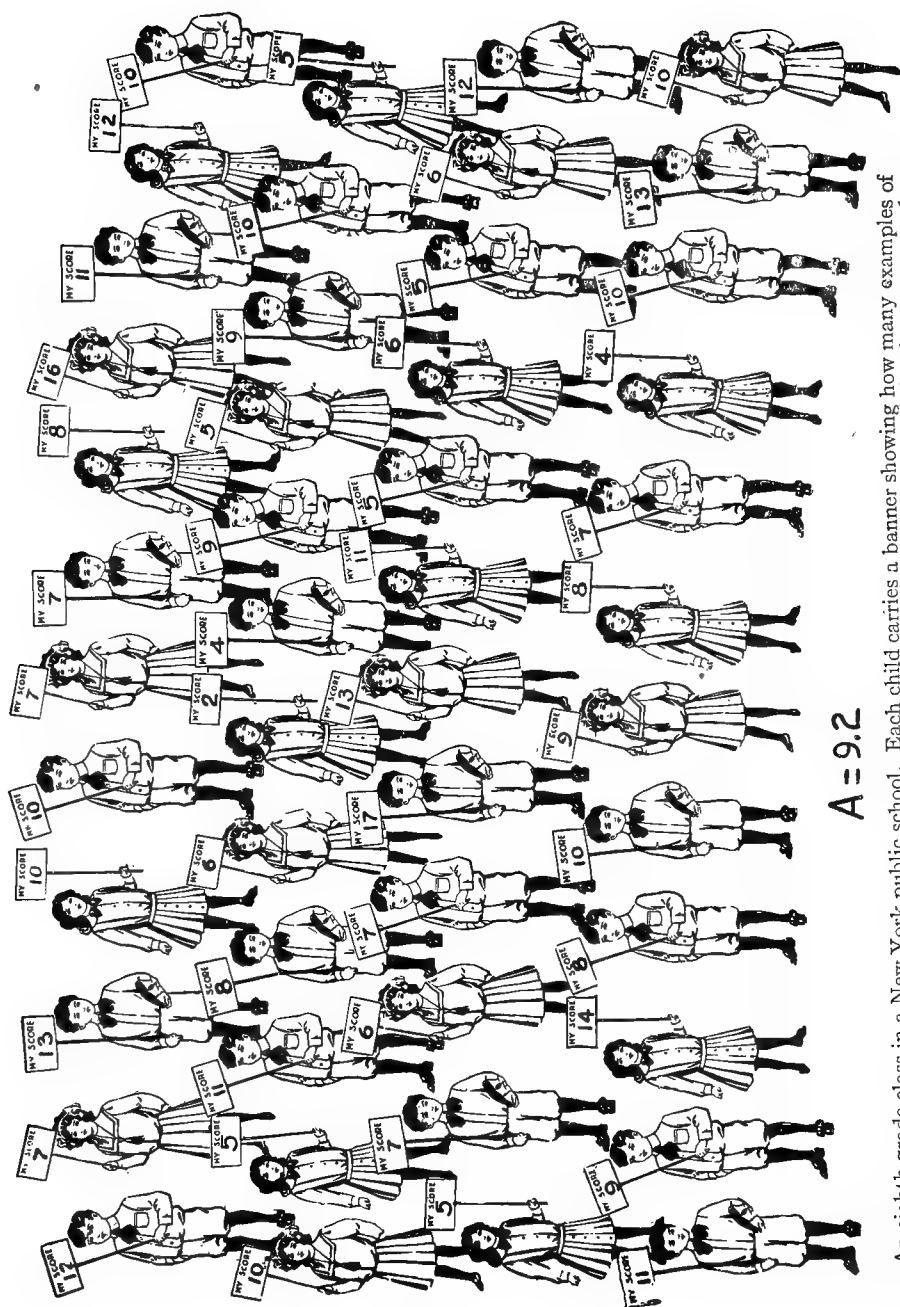
<sup>1</sup>Distribution by grades of 27,171 individual scores in Test 7, number of abstract examples attempted in twelve minutes, and number right; also average score for the grade. The table shows that, of 5,396 fourth grade children, 147 attempted nineteen examples; 49 attempted seventeen examples; 59, sixteen examples, etc. One had nineteen right; one, seventeen right, etc. The average score for the grade is 8.8 examples attempted and 4.2 examples right.

<sup>2</sup>The high school children were examined in their "official classes" which approximate the grades given.

<sup>3</sup>For cause of irregularities in the distribution of scores for examples attempted, see page 411.

<sup>4</sup>For meaning of word score, see page 405.





An eighth grade class in a New York public school. Each child carries a banner showing how many examples of those in Test 7 he or she was able to work correctly in the time allowed. Average score of the class 9.2 examples.

Fig. XII

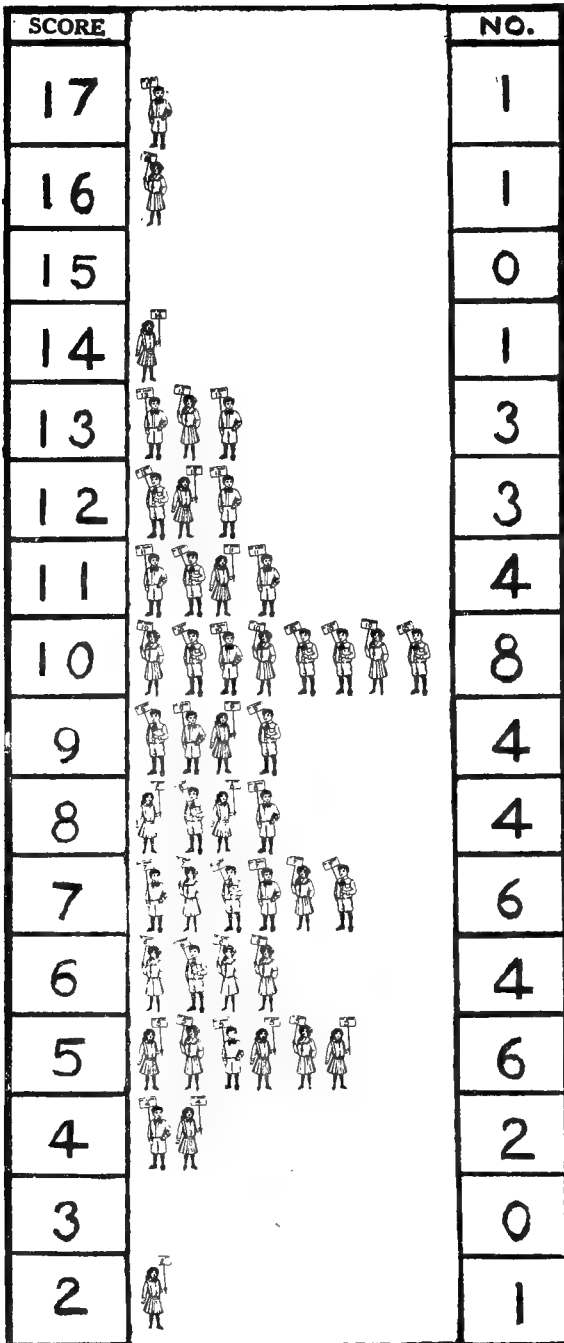


Fig. XIII

Same class as that shown in previous figure, but arranged to show the wide range of ability found in a single grade. One child could get 17 examples right in the same time and under the same conditions that another child could get but 2 right. For such a class, the average gives a wrong impression. Note how few average children there are.

It is customary in many educational discussions to work with averages, but that custom will not be followed here. For the student of education the conventional forms in which the results are given will present no difficulties, but the general reader may need to master a few fundamental ideas in order to understand readily the various tables.

In figure XII are shown the children of a certain 8th grade class in one of the New York City schools. Each child bears a banner showing its score in Test 7, Rights. The average score of the group is 9.2 examples. In dealing with a large number of individuals, however, it is much more convenient to group the scores as shown in figure XIII. Such a grouping is called a distribution, and the number of children in each group is shown in a table by figures opposite the proper score. Thus the table at the right of the figure represents the conditions shown in this and the previous figure. The reader should study these diagrams until he is able to transform, in his inner mental vision, the abstract numbers of a table into living children, until he appreciates the fact that in Table VII and every similar table throughout the report the living army of 27,121 children examined is marshalled in squads, companies and regiments, each under his own grade, each opposite his own score.

The advantage of such distributions is that all the facts are presented: the reader is not deceived. For instance, if the conventional average score were used, the reader would be told that the average score of the 5,396 4th grade children whose distribution is given in the first column of Table VII, was 8.8 examples attempted, and 4.2 examples right. About 2,000 children of the group did actually make within one example of these scores, but that is not the whole significance of the data. The statement is sometimes made that the average child does not exist. This is not true—for there are more average children than children of any other one type—but there is a measure of truth in it which the distributions bring out plainly. The statement really should be that there are more children who differ from the average than there are of average ability. Thus in the table the largest group in the distribution of the 4th grade scores, attempts, is the group of 1,296 children whose score was 9 examples attempted, or just a little more than the average. The second largest group of 956 children have a score of 8 examples attempted, or a little less than the average. These two groups are the children of "average" ability and there are more of them than of any other *one* kind.

On the other hand this fact is less than one-half the truth numerically, and very much *less* than one-half the significance of the whole truth, for the remaining 3,000 children have scores which are not average scores at all. They range from the small group of 29 who attempted no examples at all to the group of 147 who tried all 19 examples. For education the important fact is, not that 2,000 of the children in the 4th grade are of average ability, but that 3,000 *are not* and should have very different treatment from those that are. From the

standpoint of efficiency, the significance of the data is not that the average score of 4th grade children is 8.8 examples attempted, but that in the 4th grade are found good-sized groups of children of every level of ability from those who could do none of the examples at all, to those who could do all the examples in a test so long that but 1 per cent. of the high school children could finish all of it correctly in the time allowed.

The reader should study this first table thoroughly. It points out plainly the facts of largest significance both for education generally and for the local situation. It is the distributions of the individual scores that are startlingly—yes, sensationally—significant. The distributions are very wide; the individual differences within a grade are very great. In other words, each grade contains not many children of the same, or nearly the same, ability, but children of widely differing abilities. Almost the entire range of the scale is needed to express even the abilities to be found in a single grade. As measured by the grade averages, there is progress from grade to grade, but the amount of the progress is insignificant, when compared with the wide range of ability within a grade. For instance, the average increase in speed from the fourth to the eighth grade is 1.2 examples per grade, but the range of variation within each grade is nineteen examples, or sixteen times as much. To include the half of the fourth grade, where scores differ least from the average, a range of 3.5 examples is needed, or three grades. From the point of view of accuracy, the figures are relatively the same. To make plain the extent to which one grade overlaps another, if every child in the sixth grade were, when possible, mated with a child in the seventh grade, whose score was the same as its own, seventy-nine children out of every hundred in each grade would be mated on the basis of scores in examples attempted, and eighty-one out of every hundred on the basis of scores in examples right. That is to say, 80 per cent. of the children, in either grade, could be replaced by an equal number of children, from the other grade, without changing the ability of the grade in this test in the slightest.

The facts for the overlapping of these grades are shown on the basis of scores in examples right in Fig. XIV. For the overlapping of 4th and 8th grades, the per cents. would be 26 per cent. and 35 per cent., respectively, and the condition is also shown in the figure.

Or, suppose a business man hires a graduate of the grammar school. What are his chances of securing efficient help, so far as ability in the fundamentals is concerned? Twenty-one boys per thousand will be able to work examples like those of Test 7, at speed of 1.5 examples per minute, or better. If accuracy is considered, the number will be reduced to thirteen per thousand. At the rate of one example per minute, 873 boys could qualify in speed, 336 in accuracy. If a minute and a half were allowed for each example right, the number would be increased to 773, but even at two minutes for each example right, there would still be 150 boys per thousand whose work would be unsatisfactory. If one example per

Number of Children  
Making Each Score.

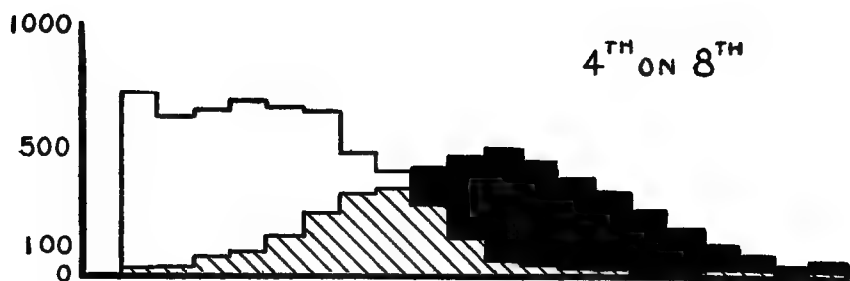
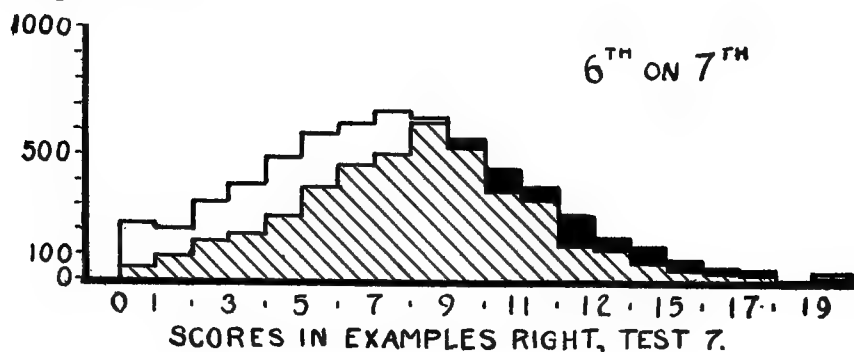


Fig. XIV

Upper part shows the overlapping of 6th and 7th grades, the lower of 4th and 8th grades, on basis of scores in abstract examples right. The shaded part in each figure shows the number of children in one grade, and their distribution along the scale, whose scores could be matched from the scores of the children in the other grade—in other words, the part common to the two grades. The black is the part of the upper grade that exceeds the lower; the white the part of the lower grade that falls below the upper. The average per cent. of overlapping represented by the shaded portion is 81 per cent. for the upper figure, and 35 per cent. for the lower.

minute be accepted as the rate necessary for efficient service, nine boys per thousand, of those in the fourth grade, will be able to meet the requirements as to speed and just not any in accuracy, so that the extra four years' training, which the eighth grade boys have received, has enabled 86 per cent. of the class to qualify in speed, and but 34 per cent. in accuracy.

#### Overlapping of Grades

However, no attempt to portray, by such limited comparisons, the significance of the data presented in the table can be successful. The real meaning is that, so far as any individual child is concerned, to say that he has completed the course in arithmetic in the public schools

is to convey *no* information as to his ability, in even the simplest work. He may be almost an absolute incompetent, so far as practical work is concerned, or he may have acquired a degree of skill that would be adequate for any situation in which he is likely to find himself. If he does "as well as the average," his ability will be no better than the upper 5 per cent. of the fourth grade. As a whole, therefore, Table VII more than justifies the severest criticism of the efficiency of the training in arithmetic afforded by the public school that has yet been made by the "man on the street."

The reader should keep clearly in mind the fact that this investigation has nothing whatever to say upon the question of whether, after all, arithmetic should be taught in the public schools. That is an entirely different question, which the public, through the press, school boards, and other agencies, has repeatedly decided in the affirmative. The sole question at issue is the degree to which the teaching is efficient. To what degree does a public school education, through the grammar grades, insure to those who complete it mastery of the simplest abilities in arithmetic? The answer, in the light of Table VII, must be that the efficiency of school work, as conducted at present, is very low.

### Objections Answered

The first reaction of the average school man, to the above statements, will be to attack the validity of the results. It is for this reason that the tests and the testing have been described in so much detail above.

**Table VIII—Summary Test 1<sup>1</sup>**

SCORE	NUMBER OF CHILDREN MAKING EACH SCORE								
	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
125	.....	4	8	7	23	.....	2	.....	.....
115	.....	4	6	7	35	1	.....	.....	1
105	7	10	35	32	122	18	9	8	8
95	4	22	53	100	234	33	22	18	13
85	32	118	288	472	767	73	56	43	24
75	68	262	595	796	1,024	106	55	41	33
65	339	1,004	1,505	1,441	1,319	136	70	44	22
55	819	1,583	1,626	1,176	703	52	28	20	13
45	1,928	1,870	1,182	602	239	18	14	4	5
35	1,657	824	313	126	32	3	.....	1	.....
20 to 29, etc.	498	125	53	10	3	.....	1	.....	1
10 to 19	39	8	5	1	1	.....	.....	.....	.....
0 to 9	5	2	1	1	.....	.....	.....	.....	.....
Total No. ....	5,396	5,836	5,670	4,771	4,502	440	257	179	120
Average Score	41.9	50.2	56.9	62.2	69.5	71.6	71.7	73.9	74.2

<sup>1</sup> Distribution by grades of 27,171 individual scores in Test 1, addition.

Table IX<sup>1</sup>—Summary Test 2

SCORE	NUMBER OF CHILDREN MAKING EACH SCORE								
	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
125	1	.....	1	2	3	.....	.....	.....	.....
115	.....	.....	.....	.....	4	.....	1	.....	.....
105	.....	3	1	5	17	1	1	.....	.....
95	.....	4	3	5	20	3	3	1	.....
85	12	19	31	34	117	9	7	9	4
75	15	27	46	92	215	26	22	17	12
65	44	168	319	465	827	80	61	39	19
55	141	485	854	1,124	1,407	143	84	55	40
45	746	1,677	1,995	1,820	1,394	137	56	42	31
35	1,601	1,875	1,634	947	424	36	20	15	13
25	2,162	1,364	718	262	71	5	2	1	1
15	606	199	63	13	3	.....	.....	.....	.....
5	68	15	5	2	.....	.....	.....	.....	.....
Total No. ....	5,396	5,836	5,670	4,771	4,502	440	257	179	120
Average Score	29.5	36.8	41.0	45.8	52.2	52.2	55.3	55.2	54.1

<sup>1</sup>Distribution by grades of 27,171 individual scores in Test 2, subtraction.Table X<sup>1</sup>—Summary Test 3

SCORE	NUMBER OF CHILDREN MAKING EACH SCORE								
	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
125	1	3	1	2	1	.....	.....	.....	.....
115	.....	2	.....	1	3	.....	.....	.....	.....
105	5	5	7	8	23	.....	1	.....	.....
95	7	2	6	10	13	.....	.....	.....	.....
85	14	24	37	33	77	5	2	1	.....
75	15	24	36	48	115	14	2	3	1
65	64	161	271	298	421	47	36	29	15
55	130	388	543	597	830	96	58	47	29
45	619	1,294	1,633	1,617	1,705	178	106	73	47
35	1,444	2,121	1,996	1,570	1,064	83	40	20	25
25	2,332	1,572	1,035	537	241	17	12	5	3
15	694	218	94	46	8	.....	.....	1	.....
5	71	22	11	4	1	.....	.....	.....	.....
Total No. ....	5,396	5,836	5,670	4,771	4,502	440	257	179	120
Average Score	28.7	35.0	38.3	40.9	45.8	46.5	46.8	48.6	46.6

<sup>1</sup>Distribution by grades of 27,171 individual scores in Test 3, multiplication.

Table XI<sup>1</sup>—Summary Test 4

SCORE	NUMBER OF CHILDREN MAKING EACH SCORE								
	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
125	.....	.....	1	1	6	.....	.....	.....	.....
115	.....	.....	1	.....	1	.....	.....	.....	.....
105	2	2	6	5	10	1	.....	.....	.....
95	3	5	2	3	21	1	1	1	1
85	7	14	29	35	124	16	9	7	6
75	11	23	52	76	189	22	17	10	14
65	34	135	279	475	780	93	52	45	21
55	75	336	645	880	1,193	135	74	55	36
45	444	1,434	1,989	1,938	1,573	126	83	48	30
35	1,264	2,088	1,732	1,014	504	35	14	11	11
25	2,419	1,505	834	320	93	11	6	2	.....
15	997	263	92	20	6	.....	1	.....	1
5	140	31	8	4	2	.....	.....	.....	.....
Total No. . . .	5,396	5,836	5,670	4,771	4,502	440	257	179	120
Average Score	26.6	34.7	39.7	44.6	50.9	52.5	52.7	54.2	55.0

<sup>1</sup> Distribution by grades of 27,171 individual scores in Test 4, division.Table XII<sup>1</sup>—Summary Test 5

SCORE	NUMBER OF CHILDREN MAKING EACH SCORE								
	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
205	.....	.....	.....	25	.....	1	.....	.....	.....
195	.....	.....	.....	.....	.....	.....	.....	.....	.....
185	.....	.....	1	.....	.....	1	.....	.....	.....
175	.....	2	2	.....	.....	.....	.....	.....	.....
165	11	37	47	49	82	1	3	3	.....
155	4	10	19	20	30	2	.....	.....	1
145	13	17	36	43	128	4	1	6	2
135	16	37	64	140	228	10	14	13	15
125	77	223	359	543	793	44	32	44	21
115	71	256	494	630	789	72	50	28	20
105	311	779	1,066	1,143	1,042	95	63	43	21
95	622	1,131	1,256	945	743	99	58	21	16
85	1,504	1,616	1,274	736	431	64	27	12	14
75	1,007	800	536	272	113	22	4	3	4
65	857	458	291	103	58	17	2	2	2
55	456	237	107	43	19	4	.....	1	.....
45	298	124	57	35	21	2	1	2	1
35	57	39	18	22	8	4	1	.....	2
25	47	39	22	13	10	.....	.....	.....	1
15	36	24	12	2	4	.....	.....	1	.....
5	9	7	9	7	3	1	.....	.....	.....
Total No. . . .	5,396	5,836	5,670	4,771	4,502	442	257	179	120
Average Score	75.35	85.5	92.5	100.	106.8	98.8	104.5	109.4	105.6

<sup>1</sup> Distribution by grades of 27,171 individual scores in Test 5, copying figures.



Table XIII<sup>1</sup>—Summary Test 6

SCORE	NUMBER OF CHILDREN MAKING EACH SCORE									
	4th Grade		5th Grade		6th Grade		7th Grade		8th Grade	
	At-tempted	Right	At-tempted	Right	At-tempted	Right	At-tempted	Right	At-tempted	Right
16	8	....	19	....	18	....	8	1	5	....
15	5	....	3	....	2	....	3	....	2	....
14	2	....	11	....	6	....	3	....	6	....
13	5	....	12	....	17	1	8	....	7	....
12	0	....	20	....	41	....	18	3	14	....
11	13	....	31	....	20	2	20	3	27	1
10	21	....	36	....	63	3	53	12	67	13
9	25	....	73	1	91	7	109	17	148	35
8	51	4	106	7	190	33	204	58	292	119
7	91	4	204	21	338	64	366	111	531	248
6	196	17	452	71	730	208	855	308	1,029	556
5	429	65	875	179	1,179	456	1,063	582	1,073	755
4	791	167	1,155	418	1,191	676	993	821	796	857
3	1,309	415	1,431	858	1,141	1,054	741	990	376	831
2	1,456	1,298	1,014	1,629	536	1,414	281	998	111	828
1	869	1,972	340	1,778	105	1,254	34	645	15	324
0	116	1,454	54	874	11	498	2	222	3	132
Total No...	5,396	5,396	5,836	5,836	5,670	5,670	4,771	4,771	4,502	4,502
Average Score...	3.5	1.8	4.4	2.3	5.1	3.0	5.5	3.7	6.0	4.4

SCORE	NUMBER OF CHILDREN MAKING EACH SCORE							
	9th Grade		10th Grade		11th Grade		12th Grade	
	Attempted	Right	Attempted	Right	Attempted	Right	Attempted	Right
16	....	....	....	....	....	....	....	....
15	....	....	....	....	....	....	....	....
14	....	....	1	....	....	....	....	....
13	1	....	....	....	....	....	....	....
12	....	....	1	....	....	....	....	....
11	6	....	....	....	....	....	....	....
10	13	5	4	1	3	2	2	2
9	12	6	11	8	6	3	6	2
8	37	14	15	11	17	5	18	10
7	70	43	32	19	28	15	24	18
6	96	70	63	44	51	42	37	23
5	102	93	55	54	34	31	17	21
4	62	78	44	47	22	24	11	19
3	31	62	26	37	15	23	4	12
2	8	50	5	24	3	21	1	8
1	2	13	....	10	....	11	....	5
0	....	6	....	2	....	2	....	....
Total No....	440	440	257	257	179	179	120	120
Average Score.....	6.1	5.1	6.0	5.1	6.2	5.1	6.7	5.7

<sup>1</sup> Distribution by grades of 27,171 individual scores in Test 6, speed reasoning, attempts and rights.

Table XIV<sup>1</sup>—Summary Test 8

SCORE	NUMBER OF CHILDREN MAKING EACH SCORE									
	4th Grade		5th Grade		6th Grade		7th Grade		8th Grade	
	At-tempted	Right	At-tempted	Right	At-tempted	Right	At-tempted	Right	At-tempted	Right
8	134	....	146	....	74	....	26	....	29	....
7	110	....	78	2	51	1	44	....	55	5
6	166	....	149	2	121	3	114	4	178	14
5	316	1	329	6	295	7	361	7	432	45
4	611	1	681	9	767	41	781	95	871	199
3	977	8	1,198	62	1,205	218	1,092	365	1,082	625
2	1,320	90	1,647	400	1,815	849	1,544	1,082	1,213	1,306
1	1,415	617	1,346	1,490	1,221	2,000	746	1,858	603	1,611
0	347	4,679	262	3,865	121	2,551	63	1,360	39	697
Total No...	5,396	5,396	5,836	5,836	5,670	5,670	4,771	4,771	4,502	4,502
Average Score.....	3.1	.7	3.1	.9	3.1	1.3	3.3	1.7	3.5	2.1

SCORE	NUMBER OF CHILDREN MAKING EACH SCORE							
	9th Grade		10th Grade		11th Grade		12th Grade	
	Attempted	Right	Attempted	Right	Attempted	Right	Attempted	Right
8	3	....	....	....	....	....	....	....
7	7	1	3	....	5	....	3	....
6	19	1	5	1	8	4	5	1
5	39	11	22	7	17	11	19	9
4	90	37	43	24	31	15	26	9
3	90	82	68	48	39	28	19	25
2	139	134	77	86	61	61	37	35
1	50	139	38	75	18	52	11	35
0	3	35	1	16	....	8	....	6
Total No...	440	440	257	257	179	179	120	120
Average Score.....	3.6	2.5	3.5	2.6	3.6	2.7	3.8	2.7

<sup>1</sup> Distribution by grades of 27,171 individual scores in Test 8, reasoning.

Table XV—Relation Between Age and Grade of the Children Examined

AGE	NUMBER OF CHILDREN				
	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade
Under 7	2	.....	.....	.....	.....
7	14	1	.....	.....	.....
8	347	15	.....	.....	.....
9	1,774	256	20	.....	.....
10	1,569	1,673	319	14	3
11	876	1,797	1,528	294	26
12	421	1,137	1,814	1,371	286
13	184	567	1,169	1,684	1,398
14	55	255	578	991	1,641
15	23	62	140	315	858
16	4	8	26	46	226
17	.....	1	1	8	25
18	.....	3	2	.....	4
19 or over, and no age given.....	127	61	73	48	35
Total No.....	5,396	5,836	5,670	4,771	4,502
Average Age.....	10.5	11.3	12.4	13.9	14.6

Table XVI—Grade 8A  
Sample Distributions

Test 3			Test 5			Test 6			Test 7			
No. of Boys Making Each Score	Score	No. of Girls Making Each Score	Attempts		Rights		Attempts		Score	Rights		
			No. of Boys Making Each Score	No. of Girls Making Each Score	No. of Boys Making Each Score	No. of Girls Making Each Score	No. of Boys Making Each Score	No. of Girls Making Each Score				
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	21	.....	.....	.....	.....	.....	192	256	18	1	
.....	.....	4	.....	.....	.....	.....	.....	179	231	17	10	
.....	.....	135	.....	.....	.....	.....	.....	122	231	16	16	
.....	.....	60	.....	.....	.....	.....	.....	180	36	15	27	
.....	.....	213	.....	.....	.....	.....	.....	39	15	14	33	
.....	.....	200	.....	.....	.....	.....	.....	189	190	14	69	
.....	.....	185	.....	.....	.....	.....	.....	124	113	13	81	
.....	.....	261	.....	.....	.....	.....	.....	29	18	12	91	
.....	.....	105	.....	.....	.....	.....	.....	173	119	11	101	
.....	.....	182	.....	.....	.....	.....	.....	16	9	10	104	
.....	.....	95	.....	.....	.....	.....	.....	48	31	9	115	
.....	.....	101	.....	.....	.....	.....	.....	19	4	8	120	
.....	.....	135	.....	.....	.....	.....	.....	2	.....	7	117	
.....	.....	35	.....	.....	.....	.....	.....	5	.....	6	99	
.....	.....	51	.....	.....	.....	.....	.....	2	.....	5	81	
.....	.....	63	.....	.....	.....	.....	.....	5	.....	4	118	
.....	.....	14	.....	.....	.....	.....	.....	2	.....	5	76	
.....	.....	7	.....	.....	.....	.....	.....	2	.....	4	83	
.....	.....	35	.....	.....	.....	.....	.....	2	.....	5	67	
.....	.....	7	.....	.....	.....	.....	.....	2	.....	4	53	
.....	.....	23	.....	.....	.....	.....	.....	.....	.....	3	40	
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	22	
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	27	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	17	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	7	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	12	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			

The reader who has not satisfied himself that the results, if inaccurate at all, are better than the actual conditions in the schools, should read again the checks and precautions taken to insure accurate and reliable data.

The second reaction will be to demand further proof. Accordingly, in Tables VIII to XIV are given the distributions for each of the other tests. For tests 1, 2, 3, 4, and 5, in which the number of answers written were large, it was more convenient to distribute the scores in groups of tens. Thus, all the scores ranging from 0 to 9 were put in one group, all those in the teens in a second group, all those in the twenties in a third, and so on. The average of the scores in a group would of course be the midpoint of a group, and in the tables each score is represented by its midpoint. Thus, 125 means a group of scores ranging from 120 to 129.

It will be noted that the results are similar for every trait. In Table XV are given the data for the relation between age and grade, to show how completely all standards have departed from our schools. The results resemble, in many features, those of the other tables. Then, lest the extent of the overlapping of grades be thought due to the combining in one column of the distributions of boys and girls, as well as of A and B classes, in Table XVI are given, for the 8A grade, the data of Table VII (Test 7), and of other tables, in the form of the separate distributions by sex.<sup>1</sup> None of these alternative forms, however, change the general result in any way. The great individual variation persists, through these and through all the other and similar tables, that constitute the tabulations in full.

The third reaction will be to demand why, if such conditions exist, they are not known and remedied. The answer must be that, whenever the individual scores have been given, similar conditions have been shown by the results of every published comparative test with which the writer is familiar. Rice and Stone both comment on the great individual variations, and similar tests in other subjects—handwriting, spelling, and English—prove that like conditions exist throughout school work.

These facts have been ignored by school men generally, because they constantly deceive themselves by faulty methods of examination, scoring, and tabulation. For one thing, aims are not clearly defined in education. Compare the vague general "to teach the multiplication tables," with the definite objective aim, "to so teach the multiplication tables that a child can write forty answers per minute in Test 3, under standard conditions." If even so relatively simple a thing as ability to work with whole numbers is a complex, what must be said of other forms of school activities? Further, the ordinary examination is an entirely inadequate measure of educational product. The units of which it is composed are chosen afresh each time a measurement is made, and are varied from

<sup>1</sup> Tabulations for all tests have been completed in similar detail and have been filed with the Committee on School Inquiry.

grade to grade. Time allowances, and other vital factors, are also variable, and, in the absence of definite units, a system of scoring is adopted in which subjective factors play the major part.<sup>1</sup> To crown all, in judgments of class progress, individual scores are replaced by deceptive grade averages, which effectually conceal the facts of individual variation. Galton, Thorndike, and a host of others have measured and discussed the importance of individual differences; lack of educational units and educational measurements has, heretofore, prevented the same facts being brought out in connection with school work. In the following paragraphs of this section the writer proposes to show that the factor of individual differences is the basic factor in all school work; that methods which do not recognize this factor are wasteful in the extreme; that such differences in methods, environment, school equipment, courses of study, training of teachers, etc., as are commonly found in the public schools of this country, produce differences in product which are *insignificant* from the standpoint of efficiency, in comparison with those differences which are due to the operation of the inherent differences of the children themselves; that, in basing school work upon the measured need of the individual, and in so modifying our present system of group instruction as to provide for supplementary individual instruction, lies the one hope for any radical improvement in the general efficiency.

### Overlapping of Grades

If the overlapping of grades shown in previous tables is expressed in slightly different form, the data can be made to yield a generalization of some importance. For instance, in Table XVII, the number (Part A), and the per cent. (Part B), of each class membership which falls below the average of a lower grade, or exceeds the average of its own, or a higher grade, are shown. These are based upon the results of

Table XVII—Overlapping of Grades

Based on Scores in Test 3, Multiplication. Table X, Page 53

#### Part A

Grade	No. of Children in Grade	Number of children in each grade whose scores exceed (+) or fall below (—).					
		The Average Score of the 4th Grade (28.7)	The Average Score of the 5th Grade (35.0)	The Average Score of the 6th Grade (38.3)	The Average Score of the 7th Grade (40.9)	The Average Score of the 8th Grade (45.8)	The Average Score of the High School Classes (47.0)
4	5,396	+2,299	+1,433	+999	+731	+422	+360
5	5,836	—1,655	+2,751	+2,115	+1,644	+997	+868
6	5,670	—1,037	—2,138	+2,734	+2,207	+1,391	+1,228
7	4,771	—533	—1,372	—1,843	+2,291	+1,432	+1,320
8	4,502	—226	—782	—1,101	—1,485	+1,965	+1,814
H. S.	996	—34	—122	—172	—246	—448	+467
.....	27,171	.....	.....	.....	.....	.....	.....

<sup>1</sup>See School Review, Vol. XX, No. 7, September, 1912.

### Part B

Derived from Part A.

Grade	No. of Children in Grade	Per cent. of the children in each grade whose scores exceed (+) or fall below (—)					
		The Average Score of the 4th Grade (28.7)	The Average Score of the 5th Grade (35.0)	The Average Score of the 6th Grade (38.3)	The Average Score of the 7th Grade (40.9)	The Average Score of the 8th Grade (45.8)	The Average Score of the High School Classes (47.0)
4	5,396	+43%	+27%	+19%	+14%	+8%	+7%
5	5,836	—28	+47	+36	+28	+17	+15
6	5,670	—18	—38	+48	+38	+25	+22
7	4,771	—11	—29	—39	+48	+31	+28
8	4,502	—5	—17	—24	—33	+44	+40
H. S.	996	—3	—12	—17	—25	—45	+47
.....	27,171	.....	.....	.....	.....	.....	.....

The bold face number is, for each grade, the per cent. of the grade membership that exceeds the average of the grade.

## Part C

Grade	Number of Children	Previous table rearranged by shifting each horizontal row enough to bring the bold face numbers into a vertical column. The average of this column then represents the per cent. of <b>any</b> grade membership that exceeds the average of that grade.										
4	5,396	..	..	..	..	<b>43</b>	27	19	14	8	7	
5	5,836	..	..	..	28	<b>47</b>	36	28	17	15	..	
6	5,670	..	..	18	38	<b>48</b>	38	25	22	..	..	
7	4,771	..	..	11	29	39	<b>48</b>	31	28	..	..	
8	4,502	..	5	17	24	33	<b>44</b>	40	..	..	..	
H. S.	996	8	12	17	25	45	<b>47</b>	..	..	..	..	
	27,171											
Generalized Values (Approximate Averages) ...		5	10	15	25	35	45	35	25	15	10	5

The table shows that in general 45 per cent. of the membership of any grade exceeds the average of that grade, 35 per cent. of the membership of the grade exceeds the average of the next higher grade, 25 per cent. of the second higher grade, and so on. Also, that 35 per cent. of the membership of any grade falls below the average of the next lower grade, etc.

## Part D

[illegible]

Table X above, ability in the multiplication tables. For example, there were 5,670 sixth grade children. Of these 1,037, or 18 per cent., had a score lower than 28.7, the average of the fourth grade; 38 per cent. fell below 35.0, the average score of the fifth grade; 48 per cent. exceeded 38.3, the average score of the 6th grade; 38 per cent. exceeded the average of the seventh grade, and so on.

In Part B of the Table, the boldface number in each horizontal row is the per cent. of that grade's membership that exceeds the average of the grade. If the table is rearranged by shifting each horizontal row of figures enough to bring into one vertical column the boldface numbers, as shown in Part C of the table, the figures in each vertical column are measures of a single relation; thus, the central column shows the per cent. of each grade's membership that exceeds the average of the grade. As the per cents. in each vertical column are closely the same, the statements of relation can be made in the form of generalizations; thus, that 45 per cent. of the grade membership of *any* grade will exceed the average score of that grade; that 35 per cent. of the grade membership will exceed the average score of the next higher grade; also, that 35 per cent. of the grade membership will fall below the average of the next lower grade, and so on.

It will be noted that the values in each column are remarkably constant. The generalization to be made from this is that the amount of overlapping of the grades is constant, and is, therefore, due to the one factor that is common to all the schools and grades—that is, to the inherent differences in children in their ability to respond to training in the multiplication tables. The variations in methods, teachers, amount of time, and attention given to arithmetic, even in the New York schools, are sufficient to warrant the conclusion that human nature is the only factor common to all of them, but the inference becomes many times more certain when the results from the New York schools are compared with a table (Part D), made in precisely the same way, but from the data secured in the coöperative determination of standard scores.

In that investigation results were contributed by public schools and private schools, by city schools and county schools, by schools in states as widely separated as New Hampshire, and Kansas, Michigan, and Virginia, and, through the kindness of Professor J. A. Green, of Sheffield, by three schools in England. *In every class and school examined* the same conditions of variability were found, and a comparison of the per cents. of overlapping with those for the New York schools will show the constancy of the effect. New York schools are, therefore, neither more nor less efficient than schools in other cities.<sup>1</sup>

In all, however, the efficiency is *low*, so low that, for any large group

<sup>1</sup> From the point of view of attention paid to the subject, amount of teaching effort, high scores, etc., the New York schools, in the abstract work at least (see p. 466), compare very favorably with the best of the 100 odd other schools in which the Courtis Tests have been given.



of children in a single grade, 45 per cent. will have higher scores in a test of the multiplication tables than the average of the grade; approximately 35 per cent. will exceed the average of the next higher grade; another 35 per cent. fall below the average of the next lower grade; 25 per cent. will exceed the average of the second higher grade; another 25 per cent. will fall below the average of the second lower grade, and so on.

And this is, in general, true without respect to either city, or grade, or kind of school. Similar tables could be prepared for each of the other traits measured; the per cents. would vary with each test, but the essential facts would remain the same.

The reader should be very careful not to miss the true significance of this generalization. It does not mean at all that methods, training of teachers, etc., do not affect educational products; it does mean that, whether the average of the class be high or low, the variability within the class will in general be the same. A good teacher using the best methods will give her class greater opportunities for growth than a poor teacher using poor methods. The average in one case will be higher than in the other, but in each class the range of variation within the class will so *greatly exceed the difference* between the averages of the two classes as to make the gain due to teacher or method of small account. In both classes there will be children who have made great gains during the year. In both classes there will be children who have gained so little that they are practically where they started in respect to any ability. In both classes the range of variation between these two extremes will amount to many times the difference between the average scores of any two successive grades. Both classes are equally inefficient, for whether the individual making the largest, the smallest, or the average gain is accepted as the standard for the grade some children will be either under-trained or overtrained, and the work of neither class will have counted for a definite positive advance in the ability in question.

An illustration will make the situation plain. In Table XVIII are given the distributions of the grade averages in Test 7 of certain of the ninety 6B classes examined.

It will be seen that eighty-three of the ninety grade averages ( $15+28+26+14$ ), or 92 per cent., fall within the limits eleven to fourteen examples, a range of four units of the scale. In the table are given also the distributions of the individual scores of the class having the highest grade average, of the class having the lowest grade average, and of eight other classes chosen at random from the ninety. The average range of variation in the individual scores in these classes is twelve units of the scale, or twice the extreme difference between the average score of the best and worst class of the ninety. The same facts are shown graphically in Fig. XIII. Note that the range of the individual scores in best and worst classes overlaps through eight units of the scale, or more than the entire range of the ninety grade averages. But seven

Table XVIII—Comparison of Range of Variation in Grade Averages with That in Individual Scores on Basis of Scores in Test 7, Attempts, 6-B Grades

Group	Number in Group	NUMBER OF EXAMPLES ATTEMPTED, TEST 7																		Average Score in Test 7, Attempts
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Classes 90	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12.8	
Grade Averages.....	Children	Number of classes making each score																		10.0 10.3 12.0 13.0 13.1 13.2 13.5 14.2 14.6 15.1
		1	1	1	1	1	4	15	1	9	0	4	3	0	1	..	..	..	..	
		..	..	..	2	0	3	11	1	8	1	3	..	..	..	..	..	..	..	
		..	..	..	..	1	1	2	0	2	1	4	5	1	0	..	1	..	..	
		..	..	..	..	..	..	1	6	1	8	0	5	5	0	2	2	0	2	
		..	..	..	..	..	..	1	8	0	10	1	8	4	0	2	2	0	4	
		1	0	0	0	0	0	5	0	8	0	6	4	2	0	2	3	0	3	
		..	..	..	1	..	..	4	1	6	0	4	6	0	2	2	5	0	1	
		..	..	..	..	..	..	..	3	0	3	0	5	8	0	4	7	0	1	
		..	..	..	..	..	..	1	2	0	7	0	3	6	0	2	5	0	5	
..	..	..	..	..	..	..	..	1	0	4	1	7	13	1	3	2	0	5		

The table shows that of the 90 6 B classes examined, the class average of 6 classes was between 10 and 11 examples of 15 classes between 11 and 12 examples, and so on; also that in the class having the lowest class average there were 42 children, of whom 1 attempted 3 examples, 1 four, 1 five, etc.; also that the average score of all the 6-B classes was 12.8 examples, of the lowest class 10.0 examples, of the highest class 15.1 examples. The difference between the highest and lowest individual scores in any one class is much greater than the difference between the average scores of the highest and lowest classes.

children out of the thirty-seven in the "better" class have scores that are not equaled by some member of the other class, or but nine members out of the forty-two in the "poorer" class have scores lower than any in the better class. Under such conditions the amount by which one class average is "better" than the other has little significance.

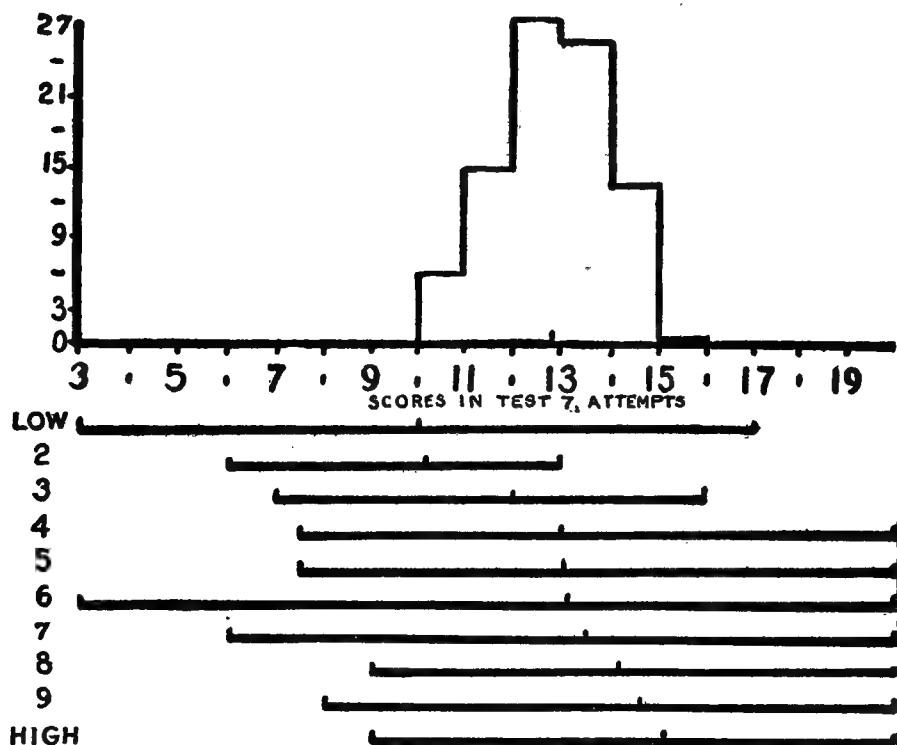


Fig. XV

The upper part of the figure shows the distribution of the grade averages of ninety 6B classes in Test 7, Attempts. The extreme range of the variation is six units, from ten to sixteen examples. The lower part of the figure shows the range of the individual scores in the class having the highest grade average, the lowest grade average, and eight other classes chosen at random. The average range of individual variation in a single class is twelve units. The position of the average score in each class is indicated. As a whole, the figure shows that relatively the difference between the "worst" class and the "best" class is a less important matter than the individual variation within a class.

The difference between the grade averages of any two 6B classes chosen at random will be much smaller on the average than the differences between the scores of two individuals, also chosen at random, from either class. Similar statements are true of other tests.<sup>1</sup> Therefore,

<sup>1</sup> See *Elementary School Teacher*, Vol. XII, No. 3, Nov., 1911.

the efficiency of school work is not to be judged by the position of a class average on a scale. For the movement of the class along a scale is dependent solely on the time and effort given to the work, at least within wide limits. Efficiency is a matter of attaining a desired end with the expenditure of the least energy. The results show plainly that at the present time for any class a given level of ability is reached only by *moving the entire class as a whole*. This means, as before, that some members must be vastly overtrained and others much undertrained. Efficiency would mean that each would receive just the training needed and no more, and that the final abilities of the members of any grade would cluster closely around the average for that grade.

### Cause

The significant measure of efficiency is the per cent. of class membership having scores that fall between set limits on the scale. The ultimate measure of efficiency must take account of time and other costs, also. This leads directly to the question, "Why should the training that is adequate for the average of a class produce such remarkable gains in some and such small results in others?" The answer, which the reader will readily supply for himself, is that children differ in ability and must be treated accordingly. Every one knows this fact, but seemingly no one appreciates its significance; for the school continues to provide uniform treatment in class work to which the children make variable responses according to their abilities; responses that vary so constantly that, irrespective of grade, city, or type of school, the overlapping of grade upon grade is, in respect to any single ability, absolutely constant. It is important, therefore, that the effect of this selective action due to differences in individual capacities be clearly shown and its significance for efficiency developed.

### Individual Differences

A study of the relative development of individuals in related traits reveals great individual differences. In Table XIX are given the seventh-grade averages in Tests 1-5; also the individual scores of five boys and five girls from two 7B classes in the same school. The school was selected at random. In Fig. XVI the same facts are shown graphically. The plot of the grade averages is drawn with scales fully marked that the method of its construction may be plain. A line represents the scores for each test. One scale serves for Tests 1-4 as scores in each of these tests represent number of answers written per minute. For Test 5 the lower scale is used, in which a unit distance is half the size for the same value, since the figures copied per minute by an adult are usually double in number the answers per minute in the other tests.

**Table XIX—Relative Development in Tests 1-5, Seventh-Grade Averages and Individual Seventh-Grade Scores**

	NUMBER OF ANSWERS WRITTEN PER MINUTE IN				
	Test 1	Test 2	Test 3	Test 4	Test 5
<b>7th-Grade Averages.....</b>	62	46	41	45	100
<b>Boys</b>					
A.....	61	45	37	50	100
B.....	61	60	40	47	105
C.....	80	25	40	31	90
D.....	60	60	28	47	80
E.....	70	40	40	23	130
<b>Girls</b>					
F.....	60	45	25	37	95
G.....	70	28	39	60	100
H.....	41	46	40	36	80
I.....	60	40	50	40	90
J.....	60	26	55	44	90
<b>K Average of 4 Trials.....</b>	77	48	70	69	150

In constructing the curve from the scores of an individual, a point is found on each line corresponding to the score for that test and a line is drawn from point to point. Such a curve makes evident at once the relative development in the different abilities. Thus, on the average, 7th-grade children do better in addition than in any other test, while the scores in the remaining tests are closely the same, being slightly lower in multiplication. The curves for the individuals were drawn in precisely the same way, but for clearness each figure has been reduced to a minimum. The individuals are selections from the class to show the various types of developments, but are all from the same school and grade. Their curves show every possible type of variation—that is, A is strongest in addition, B is relatively most developed in subtraction, C has relatively a higher score in multiplication, etc. Individual K is from a different class and grade, but took twenty tests in succession. Her curve is drawn with the average values for each test. Similar results could be shown in any quantity. The most difficult record to find is that of an individual equally developed in all traits. Whether such uniformity of development is desirable or not cannot be stated at present, but as long as there is in the school the gross inaccuracy in work that is revealed by the previous tables it is probable that the defects of individual development are related to failure to work correctly as cause is to effect.

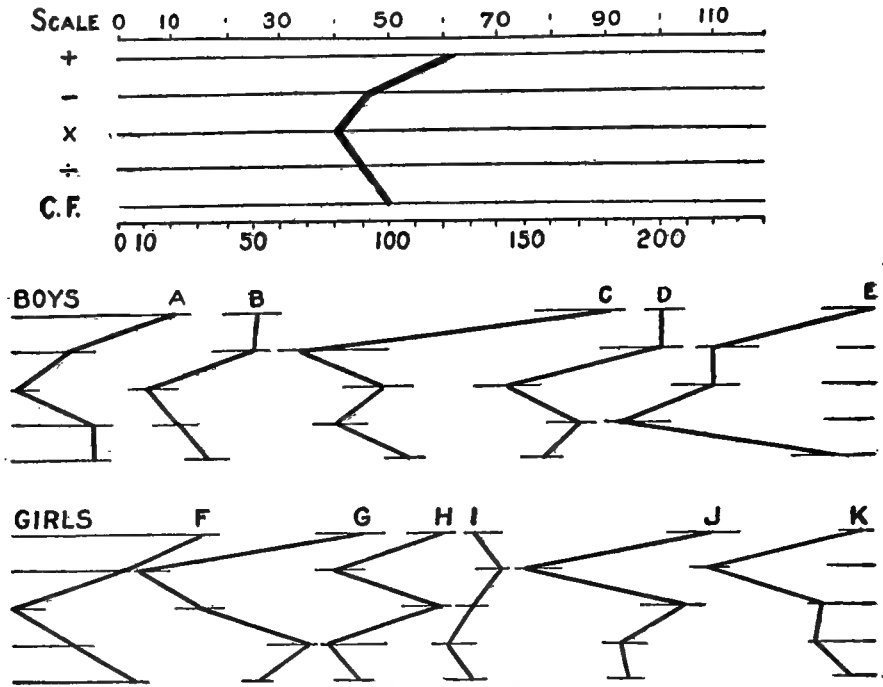


Fig. XVI

The inequalities of individual development in related abilities. Upper figure shows full scales used in plotting the 7B grade averages in the tests shown. Other figures constructed in same way from the scores of individuals, but details omitted for the sake of clearness.

The one constant feature of measurement of individuals is their variability. A careful study of repeated measurements of the same individuals through a period of three years fails to disclose any basis of classification, any trace of "types," upon which a scheme of uniform instruction might be planned. One child that is high in addition is high in subtraction also; the next is high in addition but low in subtraction. The extent of this variation is shown in Table XX. The records of fifty eighth-grade girls, each fourteen years old and from the same school and grade, though from two different sections, were arranged in order of their standings in Test 1, and numbered 1 to 50. Where two individuals had the same score, their relative rank was settled on the basis of their relative scores in the other tests. The records were then rearranged on the basis of their scores in each of the other tests, the relative rank of each being noted for each test. In the table the rankings of a chance selection of individuals are shown. In Fig. XVII, for a few individuals, lines have been drawn tracing their changes in rank.

**Table XX—Relative Ranks of Individuals in Related Abilities**

The record sheets of fifty fourteen-year-old girls from two 8th-grade classes in a school selected because of its excellent scores were arranged in order of scores in Test 1, addition, and numbered 1 to 50, commencing with highest; they were then rearranged and numbered on basis of the scores in each of the other tests. The table gives the ranks in each test of certain individuals.

Individual	RANK IN				
	Test 1 Addition	Test 2 Subtraction	Test 3 Multiplication	Test 4 Division	Test 5 Copying Figures
A	1	4	9	14	6
B	5	10	25	32	15
C	10	12	1	6	46
D	15	16	21	11	29
E	20	25	41	28	9
F	25	39	23	31	30
G	30	29	30	38	17
H	35	48	37	49	24
I	40	46	35	46	23
J	45	30	48	43	38
K	50	44	50	47	34

It is evident at once that, on any basis of sectioning, the class would have to be resectioned for every topic studied. It should also be evident that the factor of individual differences is one of much greater importance than even the figures for constancy of variability would indicate. For where forty children are growing at different rates in a dozen or more distinct but related "traits" the limit of the ability of the teacher to follow intuitively the needs, changes, and final achievements of each member of the class must be quickly reached. Yet this is precisely the problem that confronts a teacher in a New York or any other public school when he takes a grade "in arithmetic." In the absence of definite aims, and of reliable measures of progress, it is little wonder that soon every level of ability is found in the class of the best-prepared and most conscientious teacher, and that the greater his efforts the greater the variability within the class. For able children have also greater powers of growth than their less highly endowed classmates.

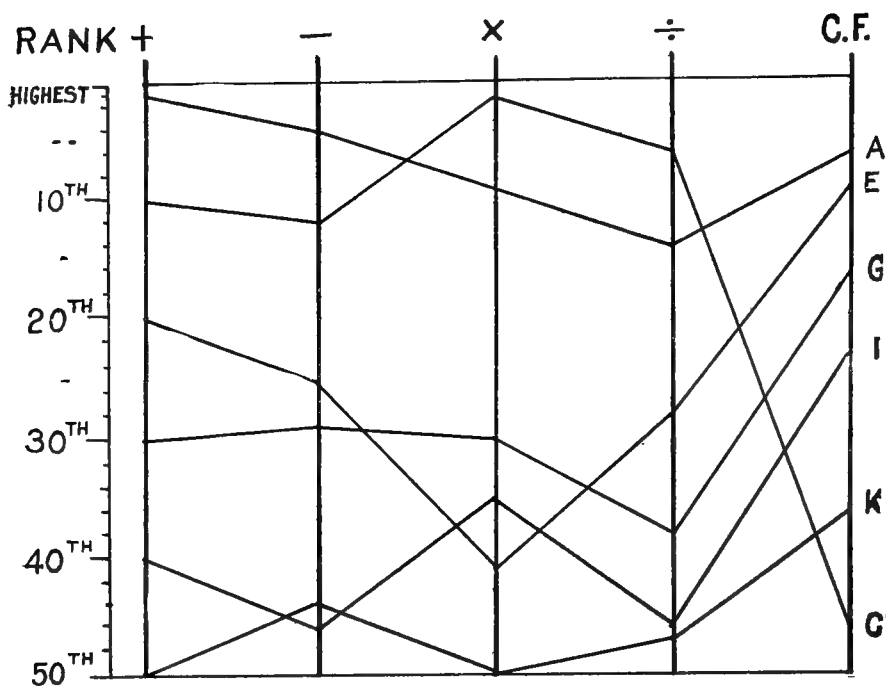


Fig. XVII

Relative rank of fifty girls of same age from same school and grade (8th) in each of five tests. A line joins the positions of each individual in the different tests. The figure shows that A had the highest score in addition, was fourth in subtraction, ninth in multiplication, etc. Grading on the basis of any one ability would not produce classes of uniform ability in other tests.

### Selective Response of Individuals

In view of the far-reaching consequences of these facts, if accepted as true, it becomes of the greatest importance to prove as completely as possible the selective response of the individual and to show the cause of the same. Experimental evidence alone is of value here, opinion has no place whatever. If it were possible to give one individual simultaneously two different trainings or to give two different individuals precisely the same training the results would prove or disprove the statements above. Twins approximate closely certain of these conditions, and in the measurement of 33,000 children measurements of many twins were secured. The individual scores of ten pairs of twins, selected from forty-six pairs, to show the various phases of resemblance and difference, are given in Table XXI and Fig. XVIII.



Table XXI

Scores of ten pairs of twins selected from the records of forty-six pairs to show various phases of resemblances and differences.

Name	Sex	Age	Grade	SCORE IN TESTS				
				1	2	3	4	5
A	Girl	10	4A	46	21	39	26	82
	Girl	10	4A	37	18	33	25	74
B	Girl	13	8B	83	69	55	65	130
	Girl	13	8B	82	67	53	67	136
C	Girl	14	8A	80	67	52	64	159
	Girl	14	7B	77	74	45	64	134
D	Girl	15	8B	62	52	43	56	109
	Girl	15	8B	74	64	56	60	127
E	Girl	10	4B	40	19	40	31	95
	Girl	10	5A	62	32	45	41	95
F	Boy	13	7B	55	29	30	22	57
	Boy	13	7B	58	38	28	33	91
G	Girl	10	5A	42	40	37	34	85
	Boy	10	4B	55	31	40	40	90
H	Girl	7	2A	18	14	13	12	57
	Boy	7	2A	32	16	32	32	20
I	Girl	15	8A	77	48	70	69	150
	Girl	15	8B	69	58	56	68	128
J	Girl	13	7A	55	70	37	46	100
	Girl	13	7B	90	62	60	48	120

<sup>1</sup> Averages of four tests of each kind.

<sup>2</sup> " " " two " " " " "

Twins are of two general types: identical twins; dissimilar twins. As there were no means of judging whether these twins were similar or dissimilar in appearance, it is impossible to say whether the likenesses and differences shown are due wholly to training or not. Dissimilar twins, however, represent two distinct individuals in inherited traits, and, further, twins receive, as a rule, more closely the same treatment through many years than it would be possible to arrange for in any artificial experiment. The measurement of dissimilar twins, therefore, fulfills closely the second experiment suggested above—two individuals undergoing the same training. Accordingly the writer personally gave a small practice series of twenty tests in succession, four of each kind, to a number of pairs of twins from a single school. He also recorded at the time, before

the tests had been scored, his judgment as to whether the twins were similar or dissimilar in appearance. The series of scores for one pair of each kind, D and I, in the previous figure, are given in Table XXII and shown graphically in Fig. XIX.

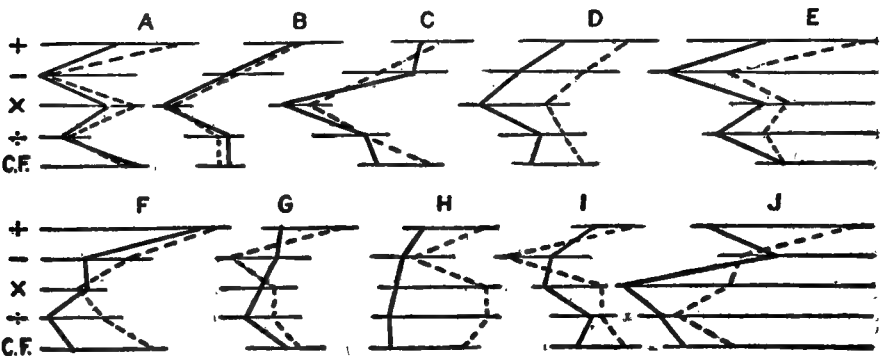


Fig. XVIII

Curves showing individual inequalities of development of twins in five related abilities. Curves drawn as in Fig. XVI. Note that the curves show all degrees of variation from close resemblance to marked differences.

Table XXII

Scores of a pair of similar and a pair of dissimilar twins in a practice series of twenty Successive tests, four of each kind. D<sup>1</sup> and D<sup>2</sup> similar. I<sup>1</sup> and I<sup>2</sup> dissimilar.

	Test 1	Test 2	Test 3	Test 4	Test 5
Twins—					
D <sup>1</sup> —1st Trial.....	65	45	32	55	90
2nd “ .....	60	55	50	60	120
3rd “ .....	67	51	45	53	113
4th “ .....	56	59	46	56	115
D <sup>2</sup> —1st Trial.....	80	55	60	60	120
2nd “ .....	70	70	55	60	135
3rd “ .....	76	60	52	56	125
4th “ .....	70	71	57	64	127
I <sup>1</sup> —1st Trial.....	83	47	72	62	160
2nd “ .....	81	52	70	68	150
3rd “ .....	75	52	71	71	145
4th “ .....	71	42	66	74	146
I <sup>2</sup> —1st Trial.....	76	55	64	71	120
2nd “ .....	66	61	55	64	145
3rd “ .....	63	58	52	70	126
4th “ .....	71	59	55	67	120

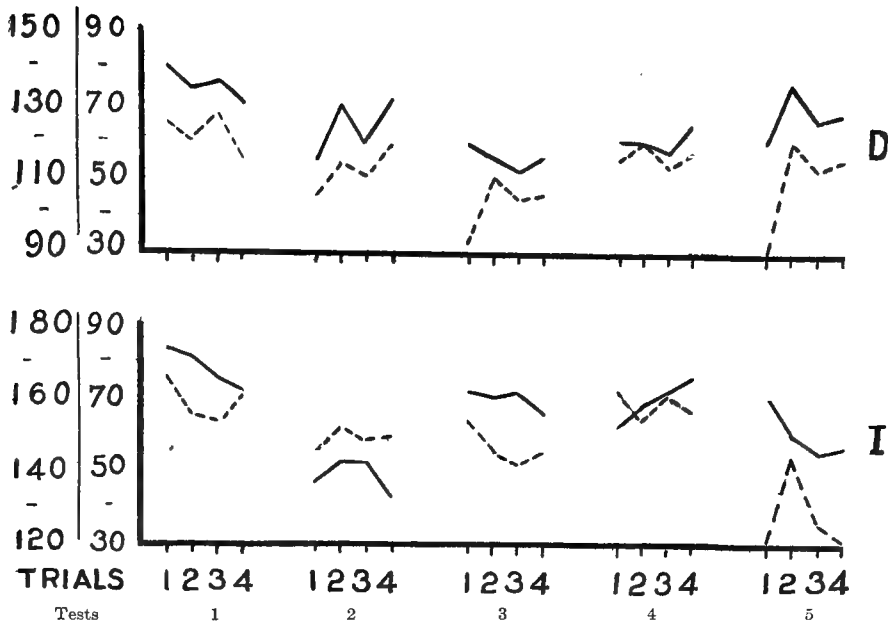


Fig. XIX

Selective response of individuals to uniform training. Variations in scores of a pair of similar (D), and a pair of dissimilar (I), twins while undergoing a practice series of twenty tests, four of each kind, in succession. Note that the similar twins responded in the same way; the dissimilar pair in different ways.

It will be seen that similar twins responded in essentially the same way; dissimilar twins in different ways. As all received exactly the same practice at one time—twenty tests in succession, the results show in a small way exactly what happens in every class under any plan of uniform instruction or uniform assignments of lessons. The inequalities of development of the individual shown above are here seen in the making. The selective response of these individuals is typical of the action which is the direct cause of the overlapping of grades, of present inefficiency.

#### Cause: Heredity (?)

To many the idea that a child has a certain capacity for growth in addition and a totally different capacity for growth in subtraction, and that the school must be guided in its treatment of the child by the character and degree of its powers as revealed by measurement, is so new and revolutionary that it seems worth while to attempt to follow the basic facts further. If such specialization of powers exists, it must be due either to heredity or to early training. If to heredity, likenesses in fam-

ily traits should be easily traced. In Table XXIII are given the data from the measurement of a family of ten from the writer's private records. The family gathered around the dining-room table and took the tests together, a series of ten tests in succession being given. The writer himself acted as examiner, and the tests were given under standard conditions. The curves for certain members of the family are shown in Fig. XX.

**Table XXIII—Average Records Made by Family M**

All members tested at the same time, ten tests, two of each kind, being taken in succession.

Date, Dec. 19, 1911

Place, Detroit, Michigan

Name	Age	SCORES IN TESTS				
		1	2	3	4	5
Father F. ....	53	77	62	57	59	122
Mother M. ....	45	52	28	34	31	102
Boy A. ....	24	102	87	73	75	156
Boy B. ....	23	81	82	58	70	107
Boy C. ....	21	65	66	53	58	116
Girl D. ....	19	87	78	69	70	125
Girl E. ....	15	70	49	66	62	135
Girl G. } Twins {	14	80	57	39	53	143
Girl H. }	14	53	34	45	39	110
Boy I. ....	12	46	33	33	45	115

From the figure it is evident that the father and mother are opposites; that certain of the children resemble one parent and certain resemble the other; that the qualities are not sex limited, as both boys and girls resemble the father. As an interesting confirmation of the discussion of the preceding paragraphs, the resemblance of one twin to the father and the other to the mother should be noted. In this case it would seem plain that the inequalities of development in the different abilities are certainly due to differences in inherited characteristics; that the children are as highly specialized in the qualities of their minds as they are in color of hair, shape of various features, and other physical characteristics. The writer has measured in this way six families and found similar irregularities of development and strong resemblances in all. This is not sufficient evidence for any finality of statement, but, in view of the conditions shown to exist in the schools, in view, also, of the inequalities in the development of most individuals, it is very certain that the whole problem of education must be approached from a new point of view.

The child is the raw material upon which the educational process

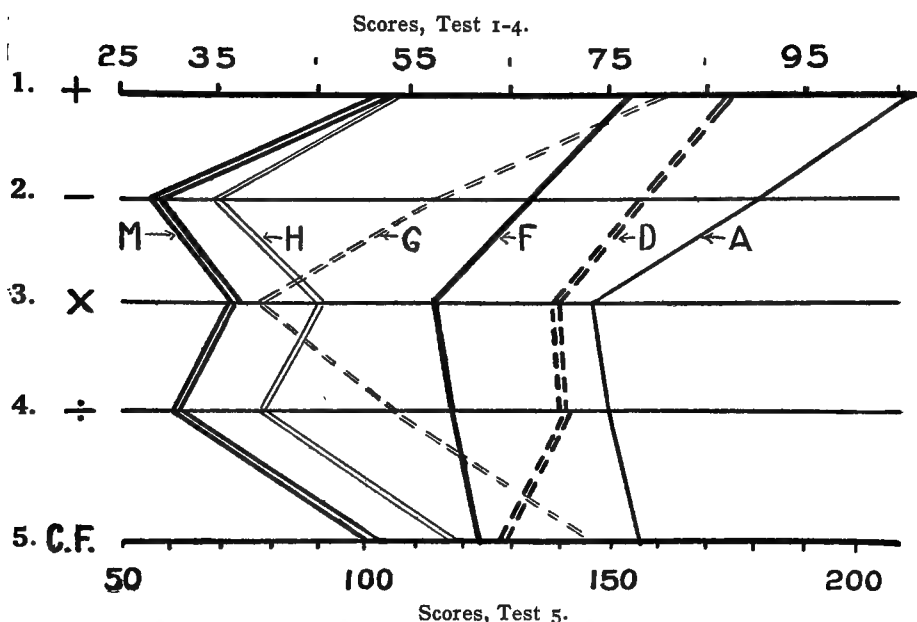


Fig. XX

Family resemblances in individual inequalities of development in five related abilities. F equals father; M equals mother. For the sake of clearness, the curves of four children have been omitted. G and H, twin girls, although attending school together, have markedly different curves, one resembling the father, the other the mother.

acts. This raw material is a living organism, specialized by the forces of heredity, living, acting, growing in accordance with the natural laws of its own development, and responding to each training to which it is subjected in a manner that is determined by both its natural powers and its past experiences. Education seeks to make certain changes in this raw material. It is certain that such changes can be made efficiently only when the characteristics of the material to be acted on are known, when the laws of its behavior are discovered, and when the progress of the change that is being made is followed quantitatively as well as qualitatively. In other words, education must fit its courses and method to the child, and not vice versa, and such fitting must not be on the basis of opinion, no matter how learned or how great an authority the personage from whom the opinion comes. Fact, scientifically determined fact, alone is the proper basis for educational theory, and each new hypothesis must ultimately be put to the tests of quantitative experimentation.

### Conclusions

The writer considers that, in the foregoing paragraphs, incontrovertible evidence has been presented that the product of school work in

New York City in the fundamental operations of arithmetic is an exceedingly variable quantity and that, in the sense that the schools should produce certain well-defined changes in the children that pass through them, their efficiency is low; that this condition is universal, and is not due to lack of effort, or other conditions that could be easily remedied, but to a neglect of one basic factor—the differences in the powers and capabilities of individual children; that children of school age are highly specialized in their mental characteristics either by the forces of heredity or of early training, and, as in the schools uniform treatment is provided for variable material, the response is selectively variable. This is the major thesis of the report. The remedies for existing conditions are obvious when once assent is given to the main proposition. To produce a uniform product from variable material, variable treatment based upon the measured characteristics of the material must be provided. The following sections of the report deal with the practical workings of such a scheme. Standards of achievement derived from the actual scores made by the children in these tests furnish definite objective aims. Applications of the principles of comparative testing that could be made by principals and teachers are outlined; problems relating to the laws of change and development, and to the determination of efficient methods, are enumerated; finally, certain phases of the results are discussed from the standpoint of supervision.

## Section VI

### Standards: Their Selection and Use

#### Content of Section

In the previous section it was suggested that the remedy for the existing inefficient conditions in our schools is to be found in standardization; that the aims of the teacher should be clearly defined by standard scores and standard growth for each grade and ability, and that the character and amount of work to be done by each individual should be determined by his measured needs. The present section will deal with the selection of such standards and with their use in the schools.

#### Standards: General Discussion

By a "standard" score for a grade in any test is meant a score set as a measure of the degree of ability to be attained by the children in that grade. Every examination at the present time contains this idea of standard, but with this difference: examinations ordinarily attempt to measure knowledge; the child is not given the same examination twice. Standard tests measure skill in the control of knowledge. Essentially the same tests are given at the beginning of the year, at intervals during

the year, and from year to year. The child's growth is shown by increased scores.

It must be evident at once that the selection of scores to serve as standards is a matter of vital importance to the success of any scheme of instruction based on them. If the work of the children in any grade is conditioned in any way by their sex, maturity, physical condition, or mental powers, the scores must be adjusted to the conditions. If all the individuals of society have need of a certain common degree of ability in arithmetic, that need must be met by the school course. Further, in the development of the component abilities of arithmetic, there may be fundamental relations between them and a lack of proper balance may render the work inefficient.

These and many other considerations that might be named make it evident that the selection of standard scores is no simple matter. As the teaching of arithmetic has not been studied from this point of view, no body of knowledge is available as a basis for selection. Tentative scores are necessary, however, for tentative scores alone make possible studies of the changes which school work is actually producing, control experiments to determine better methods, and measurement of various social and industrial workers—housewives, bank clerks, stenographers, etc.—to determine the degree of ability in arithmetic that is really essential to success.

#### Comparison with New York Averages

Reference has already been made to a coöperative investigation undertaken by the writer to determine standard scores for use in his own classes.<sup>1</sup> The scores there chosen as standard were based upon the average or most frequent score made by the children of the various grades measured in order that a reasonable standard might be attained. The averages by grades for the New York schools are given in Table XXIV and are shown in Fig. XXI in graphic form (solid lines), together with curves based upon standard scores (dotted lines) for comparison.

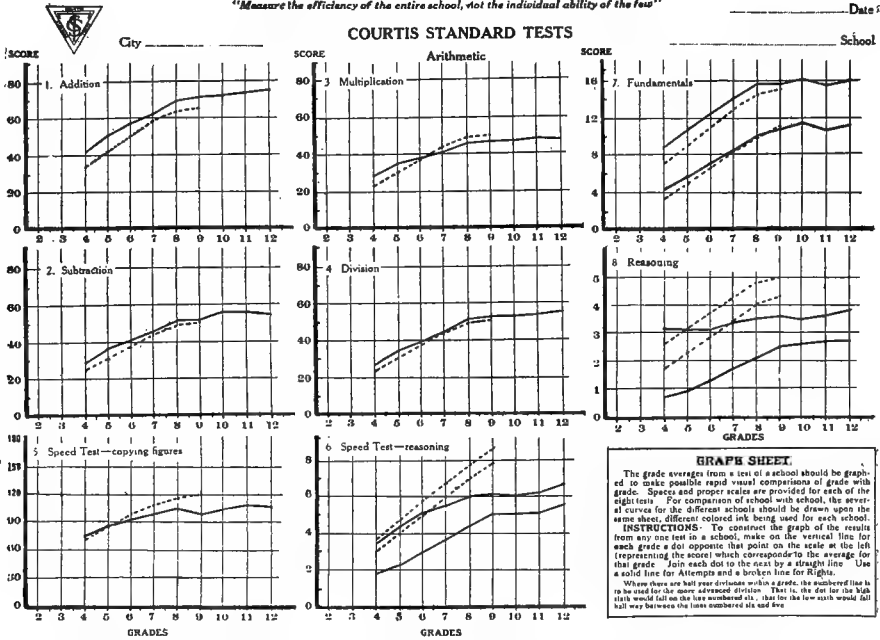
Table XXIV—Average Scores by Grades for New York City

Test	1	2	3	4	5	6		7		8	
Grade						Att.	Right	Att.	Right	Att.	Right
4th.....	41.9	29.5	28.7	26.6	75.4	3.5	1.8	8.8	4.2	3.1	.7
5th.....	50.2	36.8	35.0	34.7	85.5	4.4	2.3	10.9	5.8	3.1	.9
6th.....	56.9	41.0	38.3	39.7	92.5	5.1	3.0	12.5	7.0	3.1	1.3
7th.....	62.2	45.8	40.9	44.6	100.0	5.5	3.7	14.0	8.5	3.3	1.7
8th.....	69.5	52.2	45.8	50.9	106.8	6.0	4.4	15.7	10.1	3.5	2.1
9th.....	71.6	52.2	46.5	52.5	98.8	6.1	5.1	15.7	10.9	3.6	2.5
10th.....	71.7	55.3	46.8	52.7	104.5	6.0	5.1	16.1	11.5	3.5	2.6
11th.....	73.9	55.2	48.6	54.2	109.4	6.2	5.1	15.4	10.5	3.6	2.7
12th.....	74.2	54.1	46.6	55.0	105.6	6.7	5.7	16.0	11.0	3.8	2.7

<sup>1</sup> See p. 398, also p. 484.

*"Measure the efficiency of the entire school, not the individual ability of the few"*

Date \_\_\_\_\_

**Fig. XXI**

Heavy line—grade averages from 27,171 New York school children, A & B classes combined. Dotted lines—standard scores.

It will be noted that in general the forms of the New York and Standard curves, and the relative values for the different grades, are closely the same except in the reasoning tests. The New York averages are high in the abstract work and low in the reasoning, but, except for the reasoning, the differences are not sufficient to warrant a change in the standards, particularly in view of the meaning of these differences as brought out below.

### Explanations

The higher averages of the New York schools in the abstract work, as shown by the table, agree with the conclusions of the writer from talks with principals and from the answers to the questionnaire previously mentioned. In very many schools special attention is given to arithmetic and both teachers and principals seemed keenly alive to the importance of speed and accuracy in fundamental principles. It should be noticed, however, that while the results, particularly in Test No. 7, show a decided gain in speed, the curve for examples right does not rise above the standard. At how great a cost in time and effort such



higher "average" scores are obtained can never be learned until careful records are kept of the time actually devoted by each teacher to the arithmetical work. That, in spite of the strenuous and conscientious efforts of the New York teachers, so slight an advantage (?) has resulted bears eloquent testimony to the uselessness of attempting to make changes in children without a knowledge of the factors involved. For tabulations show plainly that accuracy has been sacrificed to speed and that the emphasis on the abstract work beyond a certain point has been fatal to a proper growth in "reasoning."

### Accuracy

In support of this first contention, Table XXV is presented. In it is shown the number of children making each score in examples attempted in Test 7 and the percentages of each group that attained to different degrees of accuracy. For instance, of the 27,171 scores tabulated, 2,223 were of nineteen attempted; 89 of eighteen attempted, and so on. Of the group of 2,223 individuals whose scores were nineteen examples attempted, 2 per cent. (33) had all nineteen right, 10 per cent. had an accuracy of from 70 per cent. to 79 per cent. right, 7 per cent. had none right. A very superficial examination of this table will show that

Table XXV

Test 7 Atts.	No. Making Score	ACCURACY IN TEST <sup>1</sup>											
		100%	95%	85%	75%	65%	55%	45%	35%	25%	15%	5%	0%
19	2,223	2	2	8	10	13	12	11	8	9	11	7	7
18	89	2	1	12	9	19	19	4	5	8	17	2	2
17	2,306	2	4	16	19	9	17	12	4	8	4	2	3
16	1,480	2	4	14	8	19	18	6	11	5	8	3	2
15	450	1	4	13	12	19	11	14	7	9	4	3	3
14	2,736	4	6	10	23	12	20	7	4	8	2	2	2
13	2,658	3	6	9	11	23	10	10	13	5	4	3	3
12	514	3	9	8	12	13	23	9	9	5	3	3	3
11	4,644	6	10	13	14	14	12	11	7	5	4	2	2
10	583	4	9	11	15	14	14	11	7	5	4	..	4
9	4,509	5	..	14	16	16	16	11	8	5	3	..	8
8	2,027	6	..	13	15	16	16	..	13	9	7	..	5
7	839	3	..	17	15	..	18	18	..	13	10	..	6
6	1,122	8	..	16	..	20	18	..	16	..	13	..	9
5	618	9	..	17	..	22	..	21	..	16	..	..	15
4	346	9	..	..	17	..	27	..	..	24	..	..	23
3	250	16	..	..	..	29	..	..	24	..	..	..	31
2	133	19	..	..	..	..	35	..	..	..	..	..	46
1	62	24	..	..	..	..	..	..	..	..	..	..	76
0	52	..	..	..	..	..	..	..	..	..	..	..	100
Total....	27,171	5	4	12	14	15	15	9	8	6	5	2	5

<sup>1</sup> The distribution of the 27,171 individual records on basis of score in number of examples attempted in Test 7 is given in the second column; that is, 2,223 attempted nineteen examples, 89 eighteen examples, etc. The remainder of the table shows the per cent. of each group that attained to the various degrees of accuracy; that is, of the 1,480 children who attempted sixteen examples, 263 had eight examples right. 263 is eighteen per cent. of 1,480 and this number appears in the table in column headed 55 per cent. accuracy, since 8 examples is 50 per cent. of sixteen examples. In the column headings, 75 per cent. means from 70 per cent. to 79 per cent. In the number making the zero score in number attempted are included 33 records with impossible scores.

the "average" accuracy of the New York school children, so far as it is at all permissible to average such variable results, is very low.

Such data afford no clew to the degree of accuracy it is reasonable to demand, as every degree of accuracy is found associated with every level of ability in attempts. In absence of other knowledge, the standards derived from the average of examples right is probably as good as any, although lower than practical usage would seem to demand, and with such standards the New York results agree.

### Factors Determining Accuracy

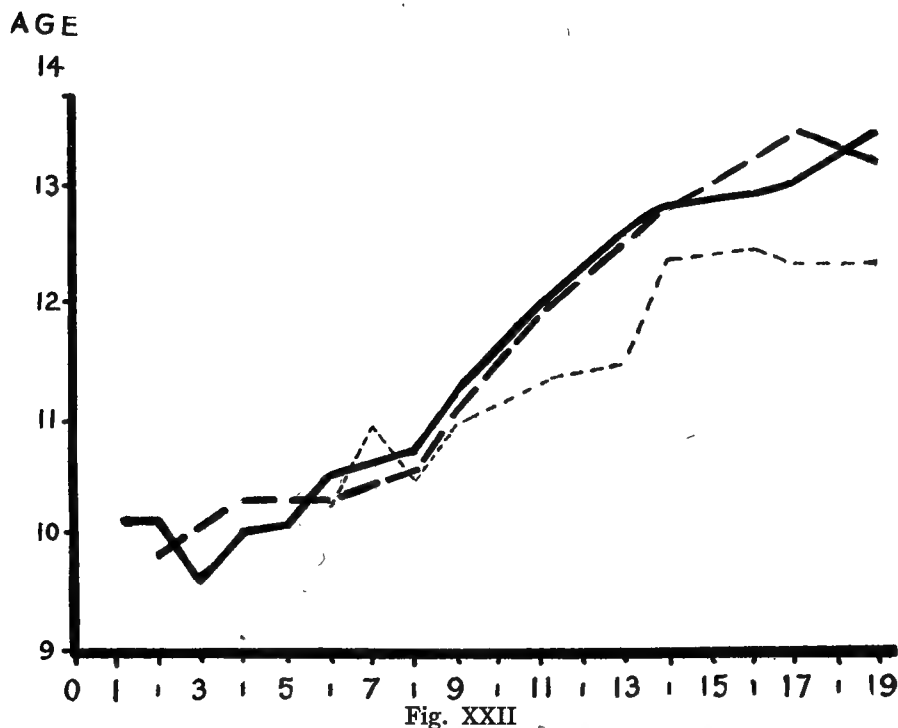
In view of such gross inaccuracy it is worth while to analyze and compare the scores of accurate and inaccurate workers in order to detect, if possible, the characteristics which make for accuracy. If accuracy is in itself the product of any one of the abilities measured by the tests, such analysis and comparison should make the differences evident.

Accordingly, the 27,171 scores in Test No. 7 were sorted into groups on the basis of accuracy. In the one hundred per cent. group were put the records of all those children whose work was absolutely correct; that is, who had 19 examples right if they attempted 19, or four right if they attempted four, and so on. Similar groups were made for 50 per cent. accuracy (50%-59%, as, for example, 9 examples attempted and 5 right), and for 10 per cent. accuracy (10%-19%). In each group

**Table XXVI—Comparison of Scores of Children Grouped on Basis of Accuracy in Test No. 7**

The 100% group includes the scores of all children whose work in Test 7 was perfect, the 50% group the scores of those half of whose examples were right, and so on. Averages have been found only in the larger divisions to avoid the irregularities due to results from too few scores.

SCORE IN TEST NO. 7 RIGHTS	NO. OF CHILDREN IN EACH GROUP MAKING SCORE SHOWN			AVERAGE AGE			AVERAGE TOTAL SCORE IN TESTS 1-4			AVERAGE SCORES IN TEST 6								
	GROUPS									Attempts			Rights					
	100%	50%	10%	100%	50%	10%	100%	50%	10%	100%	50%	10%	100%	50%	10%	100%	50%	10%
19	33	269	243	13.4	13.2	12.3	244	241	201	6.4	6.2	6.6	5.4	5.4	2.9			
18	2	17	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	52	394	113	13.0	13.4	12.3	215	225	199	5.3	5.6	6.2	4.1	3.9	2.7			
16	26	263	120	12.9	13.2	12.4	202	209	193	5.8	5.4	5.7	4.8	3.5	2.5			
15	■	48	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	93	534	81	12.8	12.8	12.3	197	195	182	4.6	5.2	5.3	3.7	3.4	2.5			
13	84	390	97	12.6	12.5	11.6	187	186	167	4.6	4.8	5.0	3.3	2.8	2.2			
12	14	...	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	280	556	171	11.9	11.8	11.3	166	168	160	4.0	4.2	4.3	2.9	2.4	1.9			
10	20	83	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	341	698	148	11.2	11.1	10.9	149	148	143	3.3	3.5	3.5	2.1	1.8	1.6			
8	124	327	133	10.7	10.6	10.5	139	133	133	3.1	3.2	3.9	1.6	1.5	1.5			
7	8	61	35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	87	207	146	10.5	10.3	10.3	129	122	124	2.8	2.9	3.0	1.4	1.3	1.2			
5	55	...	...	10.1	...	...	121	...	...	2.7	...	...	1.4	...	...	...	...	...
4	30	95	...	10.0	10.3	...	113	119	...	3.1	2.7	...	1.1	1.2	...	...	...	...
3	40	...	...	9.6	...	...	112	...	...	2.0	...	...	1.0	...	...	...	...	...
2	25	47	...	10.1	9.8	...	128	116	...	3.5	2.5	...	1.6	1.1	...	...	...	...
1	15	...	...	10.1	...	...	127	...	...	3.2	...	...	1.3	...	...	...	...	...



Comparison of ages of children grouped on basis of accuracy of work in Test No. 7. The solid line represents the average age of the children attempting 3 examples, 5 examples, etc., in Test 7, and succeeding in getting every example right. The broken line represents the average age of those half of whose examples were right. The light dotted line represents those who had only one example in six to ten right (19 per cent.-10 per cent.). This last very inaccurate group is composed of younger children who worked too rapidly.

for each rate of speed (19 examples in 12 minutes, 10 examples in 12 minutes, and so on), the average age was found; also the average total score in Tests Nos. 1 to 4, and the average scores in Test 6, both attempts and rights. The inferences to be drawn from the results are suggestive. The data are given in Table XXVI, and for age in Figure XXII.

In this figure, the solid line represents the 100 per cent. group, the broken line the 50 per cent. group, and the light line the 10 per cent. group. It is apparent that in the lower levels of ability, and for the 100 per cent. and the 50 per cent. groups throughout, there are no differences in age between the accurate and inaccurate children, but from 9 examples on the younger children who work at high speed, do so at the expense of accuracy. Accuracy, therefore, is probably related to both speed and maturity. Here as elsewhere the problem is one of balance. The child should learn to work rapidly, but development in speed and development

in accuracy should be carried on together. For such rapid work as is represented by these tests a reasonable speed, at any level of ability is that speed at which at least 70 per cent. of the answers are right. The value of standard scores for purposes of control should need no discussion.

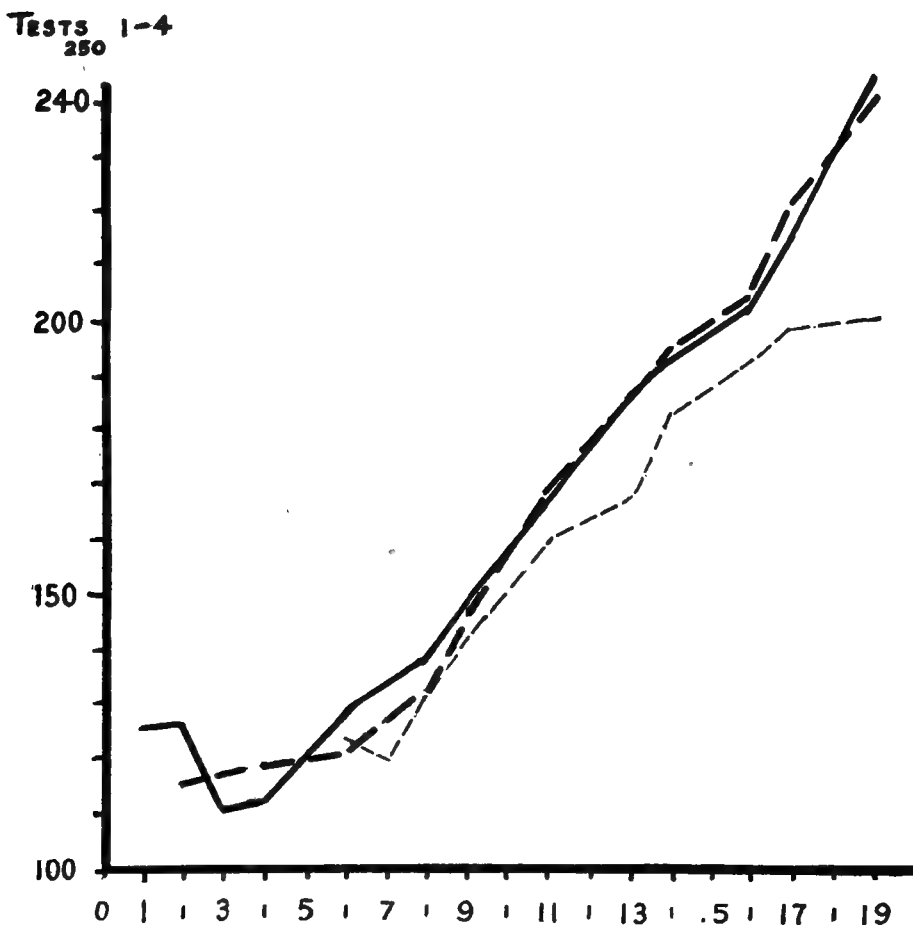


Fig. XXIII

Comparison of scores in Tests 1-4 (knowledge of the tables) of children grouped on basis of accuracy of work in Test 7 as in previous figure. Solid line the 100 per cent. group, broken line the 50 per cent. group, light broken line the 10 per cent. group. The curves for the 100 per cent. and the 50 per cent. groups are closely the same throughout, that for the 10 per cent. group is somewhat lower. That is, knowledge of the tables is not a factor in determining the accuracy of a person's work, except for the very inaccurate. Compare with results shown in Tables XXII, XXIII, XXIV, XXV.

The comparison of the three groups in total scores in Tests Nos. 1-4, knowledge of the tables, is shown in Figure XXIII.

A certain knowledge of the tables is essential to successful work, and part of the inaccuracy of the 10 per cent. group is undoubtedly caused by its lack of ability in tests 1-4. But as the 50 per cent. group and the 100 per cent. group have equal command of the tables, it should be clear that knowledge of the tables alone does not insure accuracy.<sup>1</sup> As pointed out below, beyond a certain point drill on the tables may be not only useless, but positively harmful.

In Figs. XXIV and XXV are presented the comparisons for speed and accuracy in reasoning.

### TEST 6 ATTEMPTS

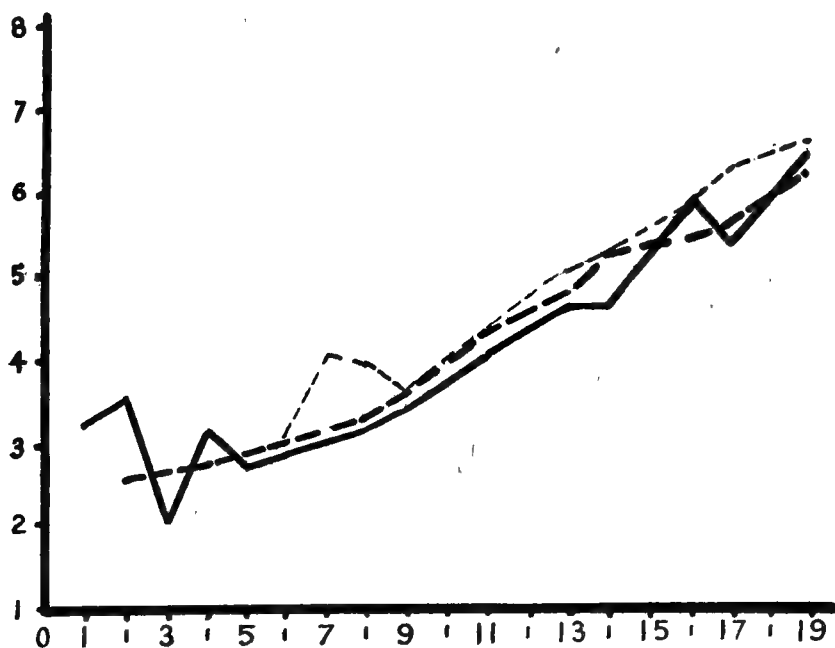


Fig. XXIV

Comparison of scores in Test 6 (speed reasoning attempts) of children grouped on basis of accuracy of work in Test 7, as in previous figures. Solid line the 100 per cent. group, broken line the 50 per cent. group, light broken line the 10 per cent. group. The inaccurate groups have slightly higher scores.

Figures XXIV and XXV show that the inaccurate groups attempt more reasoning examples than the accurate group, but get less right.

<sup>1</sup> See Fig. XXV, page 472.

## TEST 6 Rts

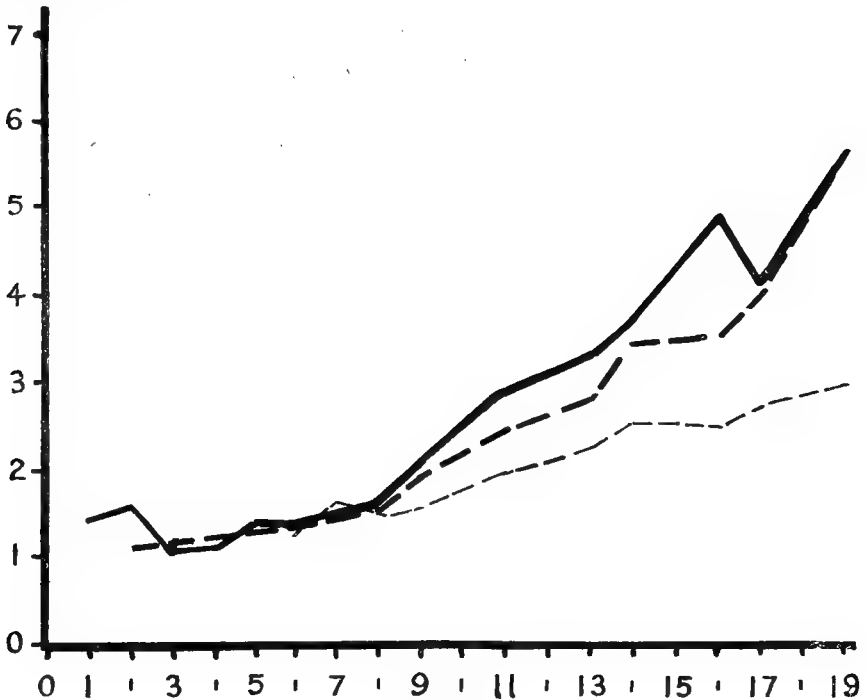


Fig. XXV

Comparison of scores in Test 6 (speed reasoning rights) of children grouped on basis of accuracy of work in Test 7, as in previous figures. Solid line the 100 per cent. group, broken line the 50 per cent. group, light broken line the 10 per cent. group. Accuracy in reasoning and accuracy in abstract work occur together.

In other words, the child that is accurate in reasoning does not make mistakes in abstract work either. It is not possible to tell from these data whether the two things are related as cause and effect or not. If accuracy is determined by the innate characteristics of the individual, then training in reasoning would not be likely to transfer. If, however, training in reasoning increases an individual's powers to attend to whatever he may do, then additional work in reasoning would increase the accuracy of the abstract work. Here again opinion counts for little; the question needs to be settled on the basis of experimental results alone. In view of the low scores in reasoning made by the New York school children, and the gross inaccuracy of their abstract work, such an experiment would seem a very wise one to try.

So far, then, as this analysis covers the component elements of the fundamentals in arithmetic, accuracy is conditioned by speed, by ma-

turity possibly, and by training in reasoning. It should be clear, therefore, that the problems of time, place and degree of development of accuracy and its relation to speed are all important questions, whose solution by experimental means should be commenced at the earliest possible moment.

### Influence of Abstract Work on Reasoning

The influence of abstract work upon reasoning is an important consideration in the selection of standards. Stone's results show that many schools high in fundamentals were low in reasoning, but that none high in reasoning were very low in the abstract work.

The lowness of the New York scores in reasoning led to a study of the connection between the two types of results. The data are given in Tables XXVII, XXVIII, XXIX, and XXX, and are presented in full, boys and girls separately. In Tables XXVII and XXVIII the relation between the number of examples attempted in Test 7 and in Test 6 is given. The scores were first distributed on the basis of scores in Test 7; then each group redistributed on the basis of the related score in Test 6. Thus, of the 13,629 boys, 1,043 boys had a score of nineteen examples attempted in Test 7; of this group, two had a score of 0 examples at-

**Table XXVII.—Ability to Work Abstract Examples and Ability in Speed Reasoning—Boys<sup>1</sup>**

Test 7 Atts. Score	No. Mak- ing Score.	TEST 6, ATTEMPTS																	
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
19	1,043	2	13	31	81	87	156	235	154	113	70	41	20	8	9	5	5	12	
18	40	1	.....	.....	2	4	9	6	4	8	2	.....	1	1	.....	.....	1	1	
17	1,052	2	6	19	80	145	226	250	155	84	41	23	10	3	1	2	1	4	
16	736	1	2	19	63	142	180	167	68	40	28	13	8	3	.....	.....	1	1	
15	197	.....	.....	5	18	33	45	38	23	19	9	5	.....	1	1	.....	.....	.....	
14	1,356	.....	7	46	172	281	359	273	109	54	33	14	4	.....	1	1	.....	.....	
13	1,331	4	18	104	221	287	308	204	97	44	26	6	2	4	2	1	.....	2	
12	236	.....	3	11	36	50	59	41	19	5	3	3	3	1	1	1	.....	3	
11	2,323	8	45	256	512	537	483	285	106	51	23	11	4	.....	2	.....	.....	.....	
10	278	.....	14	34	69	56	48	29	9	10	3	2	1	.....	3	.....	.....	.....	
9	2,323	20	136	460	625	452	361	164	54	27	12	.....	.....	.....	1	.....	.....	.....	
8	1,113	15	117	255	303	213	128	48	18	10	1	3	2	.....	.....	.....	.....	.....	
7	170	7	23	35	33	31	23	12	4	.....	1	1	1	.....	.....	.....	.....	.....	
6	606	12	80	175	159	85	44	18	12	9	1	3	2	.....	.....	.....	.....	2	
5	335	.....	65	97	72	58	18	10	3	1	2	1	.....	.....	.....	.....	.....	.....	
4	195	.....	45	47	37	28	12	11	3	2	.....	.....	1	.....	1	.....	.....	1	
3	147	.....	29	41	36	18	7	5	1	1	1	.....	.....	.....	.....	.....	.....	1	
2	80	8	18	16	15	14	5	.....	3	1	.....	.....	.....	.....	.....	.....	.....	.....	
1	33	1	8	9	7	5	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	
0	35	3	2	6	.....	9	6	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Total..	13,629	107	640	1,666	2,547	2,530	2,477	1,801	842	479	255	135	61	21	21	12	8	27	
Aver. in Test 7, attempts.....		7.7	8.2	9.4	10.8	11.6	13.0	14.2	14.9	15.3	15.8	15.6	15.7	17.1	15.2	16.8	18.7	14.8	

<sup>1</sup>The table shows that, of 13,629 boys, 107 attempted no examples in Test 6. Of the 107, three attempted no examples in Test 7; one attempted one; eight attempted two, etc., the average score of the group being 7.7 examples. It also shows that, of 1,043 boys who attempted nineteen examples in Test 7, two attempted no examples in Test 6; thirteen attempted one, etc.

tempted in Test 6, thirteen a score of 1 example, thirty-one of 2 examples, and so on. The average score in Test 7, attempts, of each of the vertical arrays is also given. The results are shown graphically in Fig. XXVI, where B is the curve for boys and G for girls. It is evident that, in spite of great individual variation, one ability is, on the average, directly related to the other.

In Tables XXIX and XXX, constructed in the same way, the data are presented for scores in Test 7 (rights) and in attempts in Test 6. It is to be noted from the table and curves that for both boys and girls the two abilities increase together up to a maximum, eight for boys and ten for girls, but that, beyond this point, a higher score in reasoning is on the average associated with a lower score in the abstract work. In other words, only those can read rapidly and understandingly who have failed to receive the drill necessary to produce, under the condition of work in the New York schools, the ability to work abstract examples correctly. In the larger number of cases those who have mastered the abstract work have a lower score in reasoning than those whose development in abstract work has not proceeded so far. So completely do the two parts of the curve balance each other, that the plot of the averages of the vertical arrays result in almost a straight line.

**Table XXVIII<sup>1</sup>—Relation Between Ability to Work Abstract Examples and Ability in Speed Reasoning—Girls**

Test 7 Atts. Score	No. Mak- ing Score	TEST 6 ATTEMPTS																	
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
19	1,180	1	2	29	61	124	221	271	174	114	69	38	23	14	13	7	5	14	
18	49	.....		1	3	7	7	9	9	7	4	1	.....	1	.....	.....	.....	.....	
17	1,254	.....	10	30	113	190	284	298	163	83	31	26	10	8	5	1	.....	2	
16	745	.....	1	8	28	91	136	180	145	68	39	20	13	6	4	3	1	2	
15	253	.....	2	7	26	51	58	46	29	12	10	4	3	3	1	.....	.....	1	
14	1,384	2	15	68	191	320	342	234	105	60	21	7	8	5	2	2	.....	2	
13	1,330	1	18	105	236	296	286	200	93	44	21	10	11	2	2	.....	1	4	
12	279	1	5	19	53	69	55	45	17	7	3	2	1	1	1	.....	.....	.....	
11	2,330	8	82	314	553	556	437	218	74	39	20	11	11	4	.....	2	.....	.....	
10	305	3	15	53	75	70	46	17	11	4	4	1	1	1	1	1	.....	2	
9	2,188	15	195	489	590	385	277	130	57	21	13	6	4	3	.....	2	.....	.....	
8	917	9	96	230	256	144	92	52	14	8	5	5	1	1	1	.....	.....	1	
7	170	4	23	45	40	37	9	5	3	.....	.....	1	1	1	.....	.....	.....	.....	
6	517	11	104	153	121	61	35	17	8	2	1	1	1	2	.....	.....	.....	.....	
5	284	11	68	80	57	39	15	8	4	1	1	.....	.....	.....	.....	.....	.....	.....	
4	151	3	35	47	24	26	9	3	1	.....	1	.....	.....	.....	.....	1	.....	1	
3	106	4	29	31	21	10	5	3	1	.....	.....	.....	.....	.....	.....	.....	1	1	
2	56	4	10	16	7	10	3	2	2	1	.....	.....	1	.....	.....	.....	.....	.....	
1	30	1	5	7	7	4	3	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	
0	14	1	3	.....	4	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Total..	13,542	80	725	1,752	2,529	2,540	2,365	1,705	835	442	224	126	82	52	29	17	7	32	
Aver. in Test 7, attempts.....		7.9	8.5	9.8	11.2	12.5	13.6	14.6	15.2	15.8	15.4	15.9	15.2	15.9	16.7	15.1	16.4	15.9	

<sup>1</sup> The table shows that, of 13,542 girls, 725 attempted but one example in Test 6. Of the 725, two attempted nineteen examples in Test 7, eight attempted sixteen, fifteen, fourteen, etc., the average score of the group being 8.5 examples. It also shows that, of 1,180 girls who attempted nineteen examples in Test 7, one attempted none in Test 6, two attempted one, twenty-nine attempted two, etc.



Table XXIX<sup>1</sup>—Relation Between Ability to Work Abstract Examples Correctly and Ability to Attempt Speed Reasoning—Boys

Score in Test 6, Attempts	Score in Test 7, Rights												Number making Scores	Average Score in Test 7 Rta.								
	0	1	2	3	4	5	6	7	8	9	10	11			12	13	14	15	16	17	18	19
16	11	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27	2.9
15	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	3.1
14	5	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	4.9
13	2	5	6	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	21	3.8
12	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	21	5.1
11	9	3	5	7	3	3	5	3	1	3	3	3	3	3	3	3	3	3	3	3	61	6.3
10	11	9	3	5	7	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	135	7.0
9	16	14	17	12	11	12	4	15	11	11	17	13	13	15	5	5	4	1	1	2	255	7.6
8	19	20	26	26	38	33	34	40	48	43	28	33	29	18	14	10	9	7	2	2	479	8.1
7	37	41	44	39	53	57	73	79	82	63	62	57	80	37	22	16	11	9	3	2	842	8.0
6	78	48	74	109	96	137	153	190	190	169	174	127	156	77	55	38	25	12	4	2	1,801	8.1
5	93	113	129	157	198	205	245	238	275	219	172	156	98	53	29	23	10	9	1	4	2,477	7.4
4	134	118	148	156	214	256	259	254	281	221	153	126	90	53	29	23	6	6	1	2	2,530	6.9
3	148	135	170	238	259	308	297	255	232	199	115	71	51	30	20	10	1	1	1	1	2,547	6.2
2	119	133	131	173	188	210	209	175	137	96	55	19	11	4	3	1	1	1	1	1	1,666	5.4
1	91	68	84	64	80	73	67	53	34	15	3	5	1	1	1	1	1	1	1	1	640	4.3
0	26	13	16	10	12	7	8	6	3	4	1	1	1	1	1	1	1	1	1	1	107	3.6
No. mak- ing Scores	803	729	864	1,010	1,180	1,327	1,380	1,289	1,320	1,066	794	614	436	318	206	142	76	49	13	13	13,629	.....
Av. Score in Test 6 Atts.,	4.6	4.5	4.6	4.6	4.5	4.5	4.6	4.8	5.0	5.1	5.5	5.6	5.8	6.1	6.1	6.2	6.8	6.4	6.9	7.3	.....	.....

<sup>1</sup> The table shows that, of 13,629 boys, 13 had 19 examples right in Test 7. Of this number, one attempted four examples in Test 6, four attempted five, etc., etc., the average score of the group being 7.3 examples. It also shows that, of 27 attempting 16 examples in Test 6, 11 had no examples right in Test 7, five had one, five had two, etc., the average score of the group being 2.9 examples.

Table XXX<sup>1</sup>—Girls

Score in Test 6, Attempts	Score in Test 7, Rights										Number making Scores	Average Score in Test 7										
	0	1	2	3	4	5	6	7	8	9			10	11	12	13	14	15	16	17	18	19
16	5	5	6	5	1	5	1	2	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	32	3.8
15	2	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	1.5
14	1	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17	5.6
13	7	5	2	1	4	3	1	1	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29	4.0
12	8	5	7	4	4	7	6	5	2	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	5.2
11	10	8	4	2	4	7	7	7	6	6	4	4	4	2	2	1	1	2	1	.....	82	6.7
10	18	14	10	18	15	10	11	7	6	6	4	4	3	2	2	1	1	2	2	.....	126	6.7
9	22	24	26	24	25	31	20	22	17	13	17	14	9	6	8	2	2	2	2	.....	224	7.3
8	24	28	39	36	46	73	66	74	83	71	51	65	38	24	26	9	6	8	1	.....	442	8.1
7	38	43	77	80	90	113	139	128	160	169	149	135	107	42	30	24	32	24	4	.....	835	8.6
6	65	66	88	86	158	137	212	225	261	220	185	192	111	87	69	49	39	16	10	.....	1,705	8.8
5	4	5	4	4	190	222	230	268	270	226	181	163	125	80	59	37	15	24	5	.....	2,365	8.4
4	78	91	129	146	190	222	230	268	270	226	181	163	125	80	59	37	15	24	5	.....	2,540	7.7
3	94	91	147	180	234	299	262	293	244	224	160	117	65	51	37	14	9	3	1	.....	2,529	6.9
2	95	140	154	176	233	205	183	186	100	100	165	51	30	17	12	7	4	2	1	.....	1,752	6.1
1	71	73	79	101	88	79	68	43	28	4	14	8	3	4	3	1	.....	.....	.....	.....	725	4.8
0	13	7	12	15	9	7	5	4	3	4	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	80	3.9
No. Mak- ing Scores	555	565	788	869	1,005	1,289	1,254	1,312	1,327	1,110	862	784	522	429	322	202	129	96	42	20	13,542	.....
Average in Test 6 Atts. ..	5.0	4.8	4.6	4.4	4.5	4.5	4.6	4.7	4.9	5.0	5.1	5.4	5.5	5.1	5.7	6.0	6.0	6.2	6.5	6.5	.....	.....

<sup>1</sup>The table shows that, of 13,542 girls, 20 had 19 examples right in Test 7. Of this number, four attempted three examples in Test 6, etc., etc., the score for the group being 6.5 examples. It also shows that, of 32 attempting 16 examples in Test 6, five had no examples right in Test 7, six had one, etc., the average score for the group being 3.8 examples.

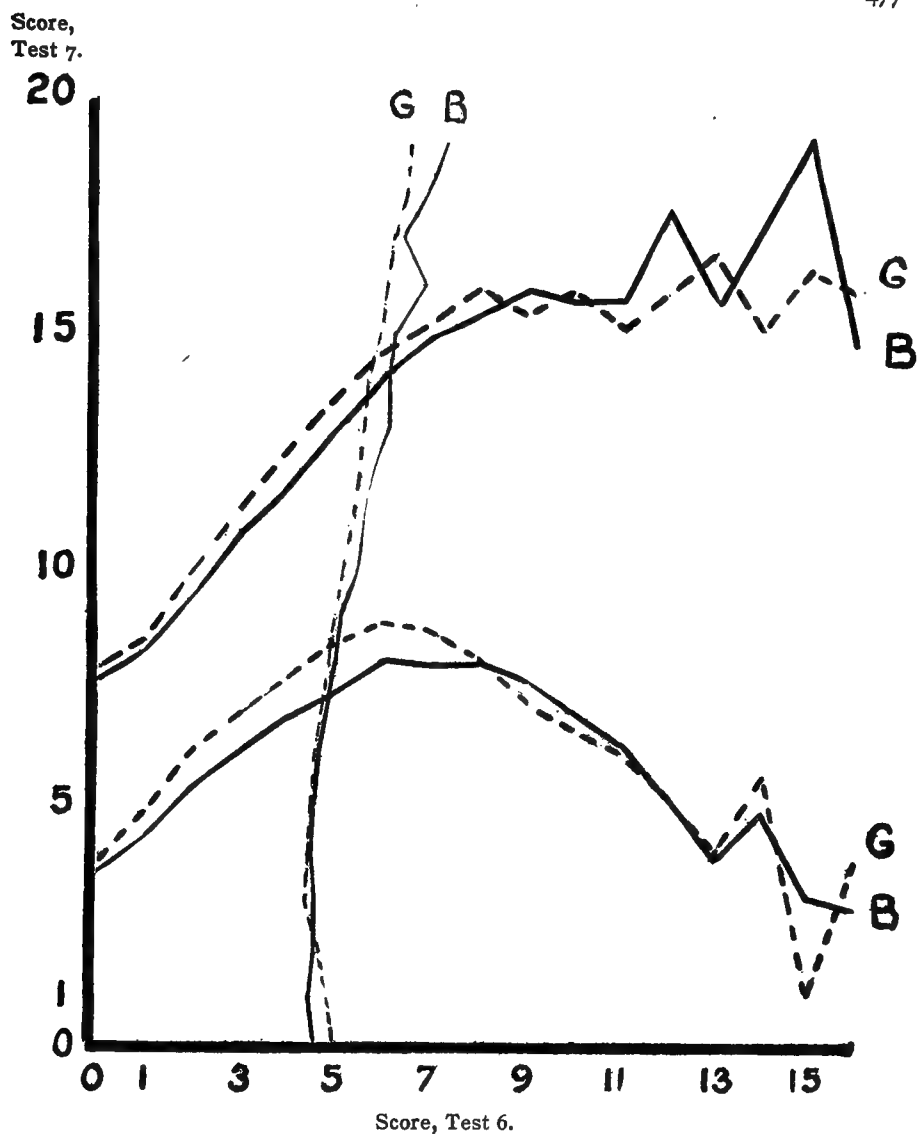


Fig. XXVI

Relation between ability in abstract work and ability in simple reasoning. The curves show that, for both boys and girls, the ability to attempt a large number of examples in Test 7 is on the average associated with the ability to attempt a correspondingly large number of examples in Test 6. But in the case of rights in 7 and attempts in 6, after the critical point is reached, a higher ability in abstract work is associated with a lower ability in reasoning—caused by the overemphasis and drill on abstract work.

That ability to tell the operation to be used in simple one-step problems is inherently opposed in any way to ability in abstract computation is not to be considered for a moment. The causes of the decline of the curve are to be found in the distribution of time in the classroom. To force the averages above the point to which they are easily raised by ordinary classroom effort, an undue amount of time must be given to drill. The law of diminishing returns explains why for every higher level reached a still greater expenditure of energy is necessary to produce further progress and, in the case of the New York schools, the high scores in the abstract work have been dearly bought. The benefit of skill that cannot be intelligently put to use is questionable, and the same effort better directed would produce not only ability in reasoning, but greater accuracy as well. For, as has been previously pointed out, at present the whole class must be moved to move the average. Those already near the upper limit of training must be pushed still higher than those lower down, sadly in need of drill, may receive a small part of what is their due. Measurement and standard scores make such procedure unnecessary.

**Table XXXI—Relation Between Accuracy in Speed Reasoning (Test 6, Rights) and Ability to Work Abstract Examples (Test 7, Attempts and Rights)**

Score in Test 6, Rights	Number of Children Making Score	Average Score of Each Group in Test 7, Attempts	Average Score of Each Group in Test 7, Rights
16	1	13	13
15	0	....	....
14	0	....	....
13	1	9	5
12	8	17.1	10.6
11	7	16.7	9.7
10	39	16.3	10.6
9	86	16.2	10.8
8	271	15.8	9.9
7	555	15.6	9.8
6	1,357	14.9	9.6
5	2,260	14.2	8.7
4	3,145	13.5	7.9
3	4,341	12.6	7.2
2	6,203	11.2	6.1
1	6,155	10.2	5.4
0	3,272	9.3	4.4
..	27,701	....	....

The total of this table, 27,701, differs from previous totals through a mistake of the Statistical Service Company. In the first attempt to make this tabulation, a small group of records was omitted. In the correction of this error, a number of records were included which had previously been rejected. As, however, the figures from the two tabulations were either exactly the same, or nearly so, and as, further, the removal of these extra cards would have entailed three or four days' work, at a time when there were no days to spare, it was decided to accept the figures given. The error is not serious and in no way changes the character of the result.

**Relation between Accuracy in Abstract Work (Test 7, Rights) and  
Accuracy in Reasoning (Test 6, Rights)**

It is advisable to follow the discussion further. The decline of the curve in Fig. XXVI might be due, in part at least, to the high scores made by those who merely "put something down" without regard for accuracy. Accordingly, a tabulation was made on the basis of examples right in both Test 7 and Test 6. The results are shown in Table XXXI and Fig. XXVII. It will be noted that both curves rise steadily almost to the end. That is, a high score (relatively) in examples right, Test 6, is on the average associated with a correspondingly high score in Test 7, both attempts and rights.

These discussions make plain the effect of the emphasis on the abstract work in the New York Schools.

## TEST 7

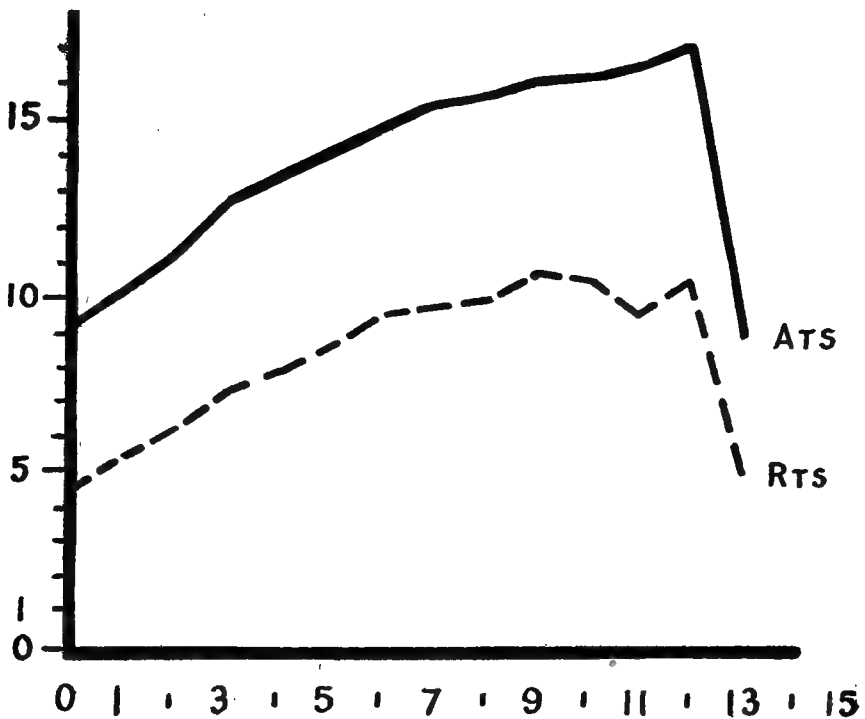


Fig. XXVII

Relation between ability in simple reasoning, Test 6, Rights, and ability in abstract work, Test 7, both attempts and rights. The two abilities are directly related.

The major effect is to decrease the amount of time and attention given to the reasoning work so that for the city the average scores in reasoning are low. (Two-thirds of the entire 27,171 children have scores of three right or lower, the standard score for the 4th grade.) A second effect is to produce habits of rapid, inaccurate work; for those who attempt many examples in one test attempt a correspondingly large number in the other. Those who are accurate in one test are accurate in another, and those who are grossly inaccurate in one are equally inaccurate in the other. A third effect to be accounted for in some individuals is the production of a marked ability in one test at the expense of the other. For example, some children that were able to attempt 19 examples in Test 7 and had 17 right, had a score of only one or two in Test 6, and, on the other hand, some children that had a score of 12 right in Test 6 attempted but 9 in Test 7, of which four were wrong. As a whole, the discussion should make evident the need for a careful balancing of the various types of work in the course of study, and the necessity for the scientific measurement of the changes that are now being produced in the children in the schools.

### **Relation of Drill on Tables to Accuracy**

On first thought, the idea that less drill, not more, will produce higher scores and greater accuracy is against common sense, particularly the common sense of the business man in whose memory of the school days of other years "drills" on the tables stand out in vivid clearness. A little consideration will show, however, that it is not the decreased amount of drill that is in itself to be of benefit, but the better use of the drill period and the participation in the drill only by those who need it. It is true that, in general, if the tables of combinations are not well learned, good work cannot be done; but it is not at all true that continued study of the tables by a class as a whole or continued practice in "figuring" will produce continued growth.

The place of drill in education is one of the debated questions of the day. It cannot be discussed here. But in Tables XXXII, XXXIII, XXXIV, and XXXV and Fig. XXVIII is given the evidence that makes some points clear. The sum of a child's scores in the first four speed tests is a measure of his knowledge of the fundamental combinations. In the table and figure, the relation between such total scores and the ability in Test 7 is brought out by a twofold distribution as above. It will be noted that on the average the score in examples attempted and right for both boys and girls rises consistently and positively with each increase in knowledge of the combinations until the maximum is reached, but that beyond this point further knowledge of the tables produces lower scores in Test 7. In the curve for rights the rise is less marked and the maximum ability reached in Test 7 is much lower. In other words, knowledge of the combinations makes for speed and accuracy

**Table XXXII<sup>1</sup>—Relation Between Knowledge of Tables (Total Score, Tests 1 to 4) and Ability to Work Abstract Examples (Test 7, Atts.)****Boys**

Score Test 7 Attempts	Number Making Score	TOTAL SCORE IN TESTS 1-4															
		0-29	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450
19	1,043	1			34	67	123	175	247	202	115	49	24	2			1
18	40					1	2	9	18	9	5	2					
17	1,052					7	41	115	311	314	166	67	20				
16	736					15	31	137	248	168	92	32	8				
15	197					2	8	34	65	47	25	10	4				
14	1,356		1		21	118	356	487	239	95	28	3	4				
13	1,331			8	33	170	445	417	174	57	15	0	2				
12	236					35	66	68	34	16	5	2					
11	2,323		1	6	116	585	834	513	183	57	22	3	2				
10	278			5	34	76	92	44	18	8	1						
9	2,323		1	49	427	843	614	262	83	27	11	2	3				
8	1,113		4	76	341	358	196	91	27	13	5						
7	170			15	57	53	28	9	4	3							
6	606		4	85	253	153	73	25	9	3	1						
5	335		8	75	106	88	36	12	0	2	2						
4	195		4	40	66	49	26	4	5	1							
3	147		3	35	50	33	18	6		1							
2	80		4	16	31	16	8	4			1						
1	33	1	1	8	15	7	2	2									
0	35		3	4	10	11	2	1	3	1							
Total....	13,629	2	35	424	1,626	2,743	3,207	2,753	1,581	772	320	102	52	8	1	2	1
Average in Test 7 attempts.....			5.5	6.9	8.5	10.0	11.9	13.1	14.8	16.0	16.9	17.0	16.6	15.7			

<sup>1</sup> The table gives the distributions of 13,629 boys in each of the two tests as in previous tables. "30" in the column headings means a total score of from thirty to fifty-nine in Tests 1-4.

**Table XXXIII<sup>1</sup>—Relation Between Knowledge of the Tables (Total Score, Tests 1-4) and Ability to Work Abstract Examples (Test 7, Atts.)****Girls**

Score Test 7 Attempts	Number Making Score	TOTAL SCORE IN TESTS 1-4															
		0-29	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450
19	1,180			4	10	42	86	200	327	268	139	62	27	9		4	2
18	49						6	8	11	15	8		1				
17	1,254			1	8	21	123	346	397	241	77	27	8				
16	745				7	30	111	268	201	92	24	7	2				
15	253				2	6	34	82	66	37	19	5	1				
14	1,384			8	17	91	365	484	288	99	24	10	2				
13	1,330		1	4	32	149	400	468	177	70	17	7	5				
12	279			3	13	33	92	73	37	24	1	3					
11	2,330			11	127	566	867	486	176	73	12	7	4				
10	305			5	35	95	87	48	21	11	3						
9	2,188			42	440	772	606	212	76	27	6	3	4				
8	917		1	69	289	293	164	65	22	10	3						
7	170		1	14	56	57	23	0	3	6		1					
6	517		6	75	181	146	64	28	11	3		1					
5	284		4	61	90	67	40	13	7		2						
4	151		3	38	50	31	18	5	3								
3	106		4	25	30	26	12	5	2	1	1						
2	56			11	16	13	10	4		1		1					
1	30	1	4	4	11	5	4			1							
0	14			1	2	6	2		2	1							
Total....	13,542		21	372	1,409	2,455	3,115	2,811	1,827	980	336	134	54	21		5	2
Average in Test 7 attempts.....			5.7	7.1	8.7	10.1	11.9	13.9	14.9	16.2	17.2	17.9	17	16.7			

<sup>1</sup> The table gives the distributions of 13,542 girls in each of the two tests as in previous tables. "30" in the column headings means a total score of from thirty to fifty-nine in Tests 1-4.

**Table XXXIV<sup>1</sup>—Relation Between Knowledge of the Tables (Total Score, Tests 1-4) and Ability to Work Abstract Examples (Test 7, Rights)****Boys**

Score Test 7 Rights	Number Making Score	TOTAL SCORE TESTS IN 1-4															
		0	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450
19	13						1		7	4	1						
18	13							1	6	3	3						
17	49					2	2	11	19	13	2						
16	76						7	17	18	20	6						
15	142					3	8	32	45	30	16	4					
14	206					7	25	63	57	32	9	7	4				
13	318					7	52	109	76	45	13	12	4				
12	436					12	78	126	107	62	38	8	5				
11	614				8	56	124	184	132	71	18	13	7				1
10	794				10	77	205	248	129	78	36	8	1	1			
9	1,066				51	172	281	285	160	65	32	14	1	2			
8	1,320				8	97	267	395	299	137	74	27	12	3			
7	1,289	1	12	125	299	368	278	120	44	29	7	4	1				
6	1,380		25	159	363	367	262	129	49	18	5	5					
5	1,327	2	42	213	357	329	219	91	43	25	3	2	1				
4	1,180	3	52	213	292	287	185	89	40	16	1	2					
3	1,010	7	81	205	240	200	139	93	33	8	1	3					
2	864	5	59	186	209	189	110	66	26	10	2	2					
1	729	4	67	178	188	145	79	44	19	4	1						
0	803	2	13	75	181	192	144	106	56	21	9	2	4				
Total.....	13,629	2	35	424	1,626	2,743	3,207	2,753	1,581	772	320	102	52	8	1	2	1
Average in Test 7 Rights.....		2.3	3.3	4.4	5.6	6.8	7.9	9.2	9.3	9.3	10.7	9.1	9.5	10.5	7.8	11.5	

<sup>1</sup>The table gives the distributions of the scores of 13,629 boys in the two abilities as in previous tables. "30" in the column headings means a total score of from thirty to fifty-nine.

**Table XXXV<sup>1</sup>—Relation Between Knowledge of Tables (Total Score, Tests 1-4) and Ability to Work Abstract Examples (Test 7, Rights)****Girls**

Score Test 7 Rights	Number Making Score	TOTAL SCORE IN TESTS 1-4															
		0	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450
19	20					1	2	1	4	6	2	2	2				1
18	42							5	15	8	8	2	2	1			1
17	96						5	18	24	20	15	9	3	1			1
16	129					1	10	32	41	27	10	8					
15	202						13	58	55	55	16	4	1				
14	322					4	33	78	102	62	27	8	5	2		1	
13	429					10	57	155	94	69	25	12	3	2			1
12	522				2	13	91	167	129	77	30	10	1	2			
11	784				3	63	178	234	170	73	35	12	5	1			
10	862				4	84	229	251	160	89	26	13	5	1		1	
9	1,110			3	35	159	307	274	188	92	37	11	3				
8	1,327			3	78	265	376	299	185	86	26	3	5	1			
7	1,312			1	16	148	289	355	256	153	63	16	5	4		1	
6	1,254		1	18	152	299	332	233	118	71	20	8	3				
5	1,289		1	39	192	318	328	203	140	48	11	7	2				1
4	1,065		1	58	179	271	253	181	61	41	13	5	1				
3	869		3	67	186	203	186	113	63	33	5	3	1				
2	788		4	56	176	189	154	112	57	22	9	5	3	1			
1	565		4	58	123	156	107	58	33	16	4	4	2	2			
0	555		4	54	126	130	99	83	35	17	1	3	1				
Total.....	13,542		21	372	1,409	2,455	3,115	2,811	1,827	980	336	134	54	21		5	2
Average in Test 7 Rights.....			2.7	3.4	4.1	5.8	7.8	8.4	9.4	9.9	10.8	10.6	9.9	9.5		13.5	9.5

<sup>1</sup>The table gives the distributions of the scores of 13,542 girls in the two abilities, as in previous tables. "30" in the column headings means a total score of from thirty to fifty-nine.



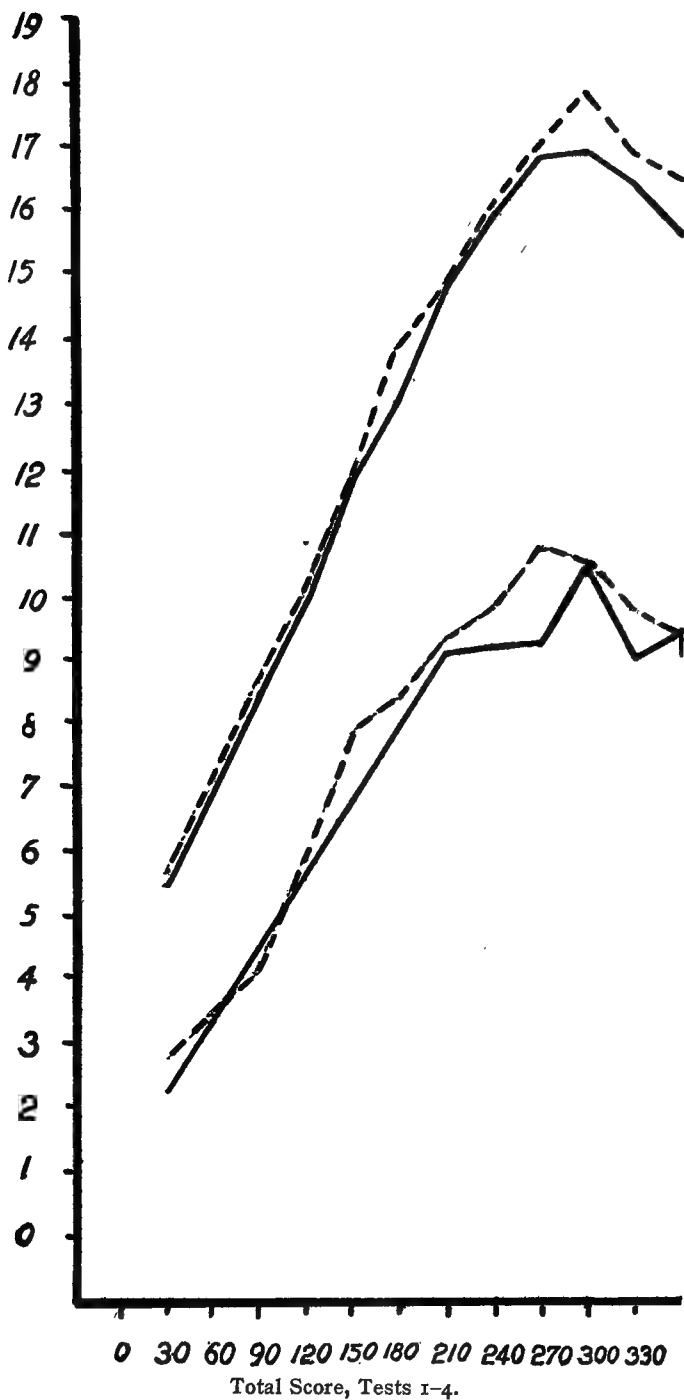


Fig. XXVIII

Relation between knowledge of the tables and speed and accuracy in abstract work. Solid line, boys; dotted line, girls; upper lines, attempts; lower lines, rights. The curves show that beyond a critical point, approximately 270, knowledge of the tables is less and less often associated with high scores in either examples attempted or examples right. Up to the critical point, knowledge of the tables makes for speed in abstract work, and to a far less extent for accuracy.

up to a certain point, but beyond this point other factors play such an important part that a greater knowledge of the tables is in itself of no benefit.

The curves for both boys and girls agree closely. The critical point is approximately 270 for all the curves, or an average score of sixty-seven in each of the four tests. Practically, however, owing to the irregularities in individual development (as previously noted) the individual scores (except in addition) do not rise so high. Accordingly, the standard scores selected for adult ability are put well within this limit.

A careful study of the table, however, will show that this most frequent relation between these two abilities is by no means the only significance of the data presented. For it is evident that the internal organization of individual minds must be very different. Of the 206 boys able to work fourteen examples in Test 7 correctly, seven did so, with each a total score of 135 in the four speed tests; while seven others did no better, although their total scores in the combinations were each 315, two and one-half times as great. Or, considering the behavior of the 772 boys whose total score was 255 points in Tests 1-4, one of them succeeded in getting all nineteen examples done correctly, but one hundred others had scores of three examples or less. With such individual differences, it must be clear that knowledge of the tables is not in itself any guarantee of ability to work examples.

### Scores Recommended as Standards

From these and other similar considerations, the scores previously selected<sup>1</sup> as standards and given in Table XXXVI are recommended as standards for the New York schools, tentative bases for experimental and corrective work. If a child's score exceeds the standard he will ordinarily need little attention, but should be excused, wherever possible, from further practice in that particular line of work. If, on the other hand, his score falls below the standard, the amount of his practice should

Table XXXVI—Standard Scores

Test No.	No. 1	No. 2	Nos. 3 and 4	No. 5	No. 6		No. 7		No. 8	
					Atts.	Rts.	Atts.	Rts.	Atts.	Rts.
Grade 3.....	26	19	16	58	2.7	2.1	5.0	2.7	2.0	1.1
Grade 4.....	34	25	23	72	3.7	3.0	7.0	3.3	2.6	1.7
Grade 5.....	42	31	30	86	4.8	4.0	9.0	4.9	3.1	2.2
Grade 6.....	50	38	37	99	5.8	5.0	11.0	6.6	3.7	2.8
Grade 7.....	58	44	44	110	6.8	6.0	13.0	8.3	4.2	3.4
Grade 8.....	63	49	49	117	7.8	7.0	14.4	10.0	4.8	4.0
Grade 9.....	65	50	50	120	8.6	7.8	15.0	11.0	5.0	4.3
Time Allowances, minutes.....	1	1	1	1	1	1	12	12	6	6

<sup>1</sup> See page 398.

be increased. In other words, adjustment of drill should be made on the basis of the measured needs of the individual. The particular form of practice a given child may need must, as ever, be determined by the wisdom of the teacher. The oral drill that will be effective with one will prove utterly futile with another; but in standard tests and standard scores, the teacher has at least a means of diagnosis of individual defects that will enable him to concentrate his efforts where they will do the most good, and a method of measuring the results of any efforts he may make. He need no longer drill the able fruitlessly, nor fail to help the weak.

### The Comparative Graph

The problem of ministering thus closely to the needs of forty to fifty children is a serious one; but the facts presented above make it certain that along this path only is there hope of improvement. The

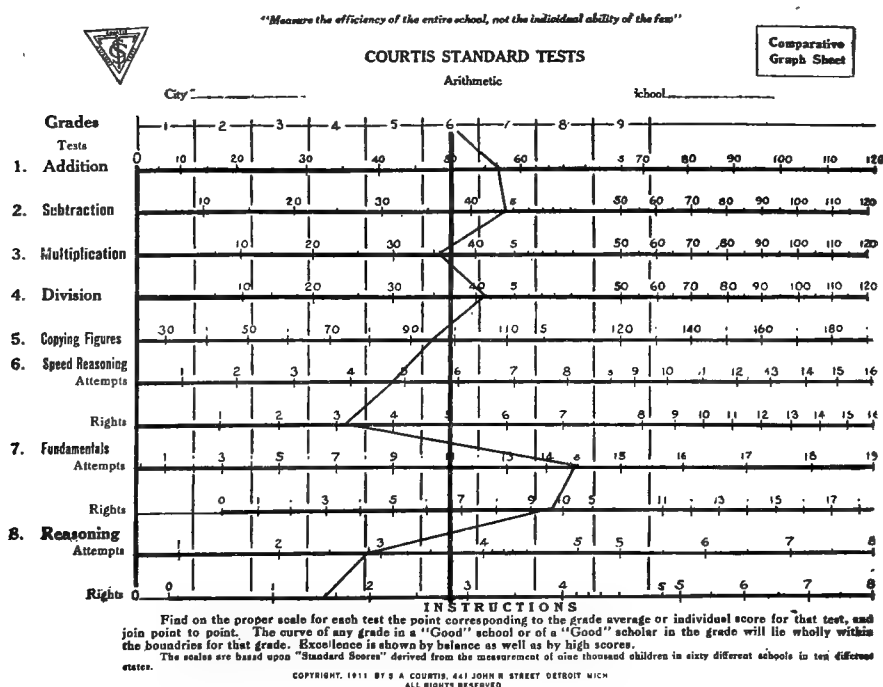


Fig. XXIX

Comparative graph sheet based upon standard scores. The scales for each test are so drawn that the standard score for any grade falls directly underneath the grade. The heavy line is the curve drawn from the standard scores. The lighter line represents the actual average scores made by a certain sixth grade class in a New York public school. The curve shows that this particular class does well in abstract work, but is low in reasoning.

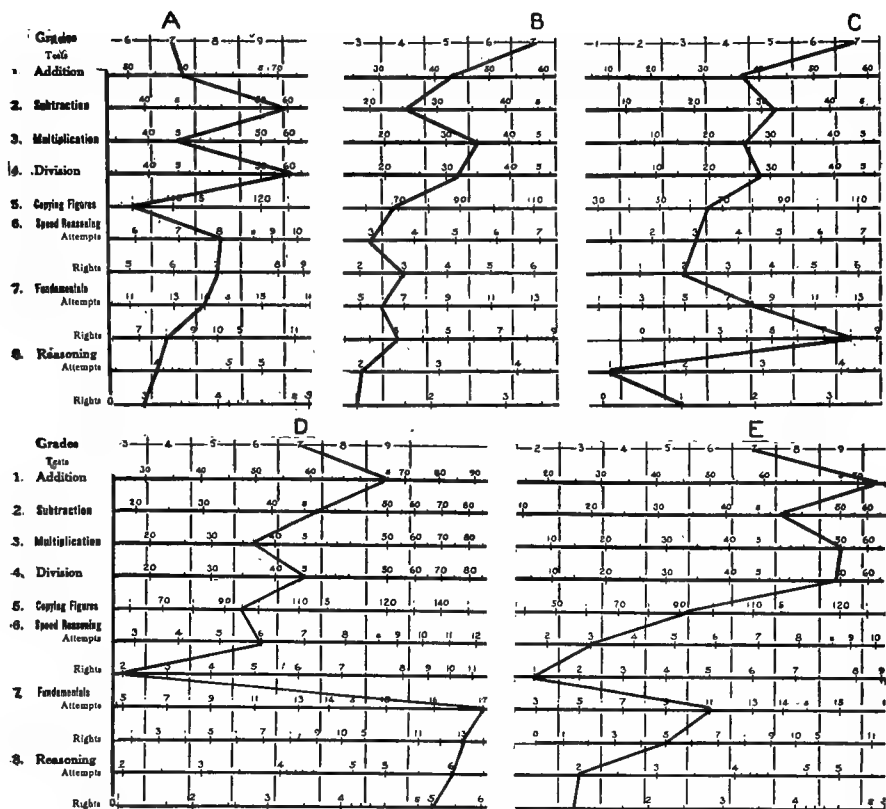
working out of practical methods must be the great problem of the immediate future. One device that is of service is the comparative graph sheet, shown in Fig. XXIX. A horizontal line is drawn for each type of score and for grades. The scales along these lines are so constructed that the standard score in each test falls directly under the corresponding grade. If, then, a point be found on each line corresponding to the score of an individual or grade in the test the line represents, and if a line be drawn from point to point, the resulting curve will show graphically the relation of those scores to the standard. For the standard curve is a straight line. In the figure, the standard sixth-grade curve has been drawn, also the curve of the grade averages of a single sixth-grade class selected at random. The relations discussed above are apparent at once. The class is above the standard in the abstract work, but falls below in reasoning.

### Uses: Diagnosis of Individual Defects

Uses of the comparative graph as a practical classroom device for keeping track of the children's needs will suggest themselves at once. In Fig. XXX are given the records of five children chosen from a seventh-grade class in the best school examined. These curves again make it plain that variability is the chief characteristic of school products in arithmetic. Individual A is most nearly standard in spite of the fluctuations of the curve. B is quite uniformly several grades below the standard in nearly every test. C represents an individual able to make the standard score in Test 7 without a standard equipment in the tables. He works accurately but is very poor in reasoning. D and E are two opposite types. D needs no special attention in spite of great irregularities in the component abilities, as his score in Tests 7 and 8 are quite exceptional. Such cases are rare. E, on the other hand, in spite of high scores in Tests 1-4, does very poorly in Test 7 and worse in reasoning. In such cases the cause must be determined from the character of his mistakes.

From the foregoing it should be clear that standard scores by no means impose mechanical methods of procedure upon the teacher. Standard tests are no substitute for initiative and resourcefulness. They but make plain the actual conditions. Where these are unsatisfactory, the remedy is often obvious, but where the usual remedy fails the teacher has at least a definite measure of the effects produced by any experiments she may try.

In Fig. XXXI the heavy line is the graph of the average scores made by the grade as a whole and over it have been drawn in the lighter lines the five individual records. The figure is given not that any detailed information may be gained from it, but that the meaning of the individual variation discussed above may be seen in its true relation to the work of a class.



Curves of scores made by five individuals in a 7B class in one of the best schools tested—showing use of the comparative graph in determining individual defects. A needs special work in addition and multiplication and direct practice in “carrying” and related abilities in abstract work; B needs special work all along the line and is probably misgraded; C represents a peculiar type and is likely to be benefited, not by drill on the tables, but by reasoning work; D is another example of the same type and needs no attention whatever in spite of low scores in the tables, as his scores in Tests 7 and 8 are satisfactory; E has been overdrilled in abstract work, needs applied problems and motived work.

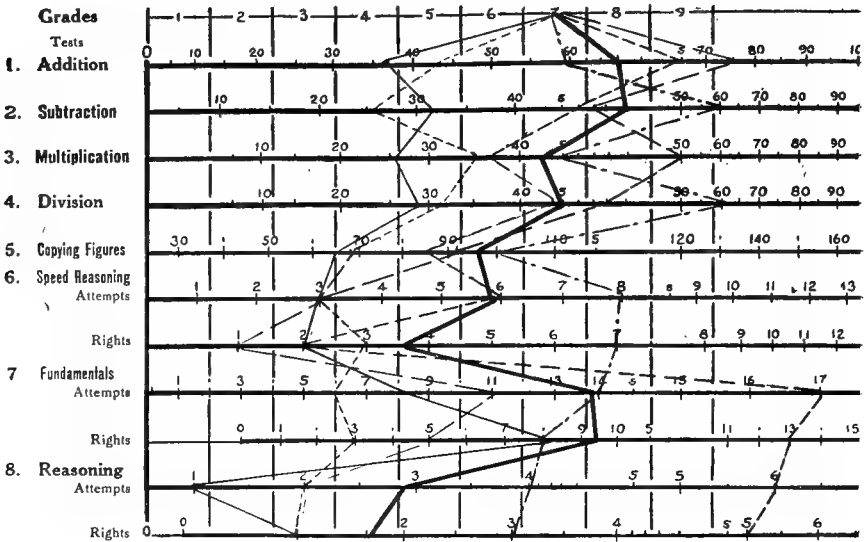


Fig. XXXI

Relation of individual scores to grade average. The curves of the five individuals shown in the previous figure are here drawn (light lines) on the same sheet with the curve of the average scores made by the whole class (heavy line). It is the blind struggle of the teacher to overcome the peculiarities of individual development shown in these curves that is the cause of the inefficiency and burden of present methods. From a 7B class in one of the best schools tested.

### Records of Growth

More important than mere records of achievement are records of growth. When the tests are given at the beginning of the year and at intervals during the year and at its close, two records drawn upon the same sheet disclose at once the nature of the changes that took place. Such studies of growth as have been made have proved that children are as variable in their growths as in their achievements. For instance, in Fig. XXXII are given the records of two individuals in the same school and class in both October and May tests.<sup>1</sup> One girl, B, has made a phenomenal growth. At the beginning of the year she knew she was to have but a single year in the school, and, appreciating her opportunities, made the most of them. The other girl, A, was less fortunate in her natural endowments, both mentally and physically, and exhibited an entirely different attitude toward her work. The difference in the curves tells the stories plainly.

<sup>1</sup> Through the kindness of Miss Margaret Eves, Supervisor of Elementary Mathematics, Ethical Culture School, New York City.

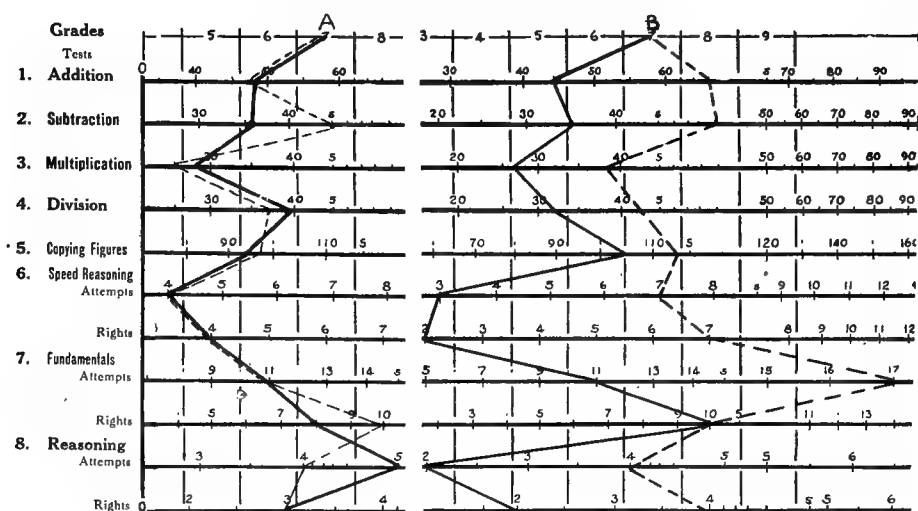


Fig. XXXII

The records of two girls in the same school and class. Solid line, October record; dotted line, May record. The differences between the two lines show the growth for the year.

### Special Devices Not Essential

It must not be supposed, however, that the use of standard scores is limited to special tests and trained examiners. The resourceful teacher will adapt the general method to ordinary classroom practice. Standard scores not only afford definite objective goals toward which to work but are also guides as to the amount of work that may reasonably be expected of the children. The scores in Table XXXVI should be translated into words. Thus: at the end of the year's work, an eighth-grade child should be able to copy figures in pencil on paper at the rate of 117 figures a minute; to write answers to the multiplication combinations at the rate of forty-nine answers per minute; to read simple one-step problems of approximately thirty words in length and decide upon the operation to be used in their solution at the rate of eight examples per minute with an accuracy of 90 per cent.; to work abstract examples of approximately ten figures (twice as many for addition) at the rate of 14.4 examples in twelve minutes, with an accuracy of 70 per cent.; to solve two-step problems of approximately ten figures in length at the rate of five in six minutes with an accuracy of 75 per cent. Further, once the idea of standard scores and individual attention is grasped, the teacher will be able to devise many simple tests of his own. The three things to be observed are: A fixed time allowance and uniform conditions for all; tests long enough to keep all busy during the entire period, and the use of the individual records in place of grade averages. Individuals

at both extremes of the class distribution need the teacher's special attention.

### Diagnosis of Defects in Course of Study

The grade averages from a school or a system may also be plotted on the comparative graph sheet. The graphs of the New York scores are shown in Fig. XXXIII. The general characteristics previously described are very evident. When all the classes of a city show such general characteristics, the fault lies in the course of study, or in the way it is administered. When, however, there are variations from grade to grade, or from school to school, the differences are caused by local conditions, usually the ideas or abilities of the teacher. Two illustrations, confirming also previous discussions, will be given.

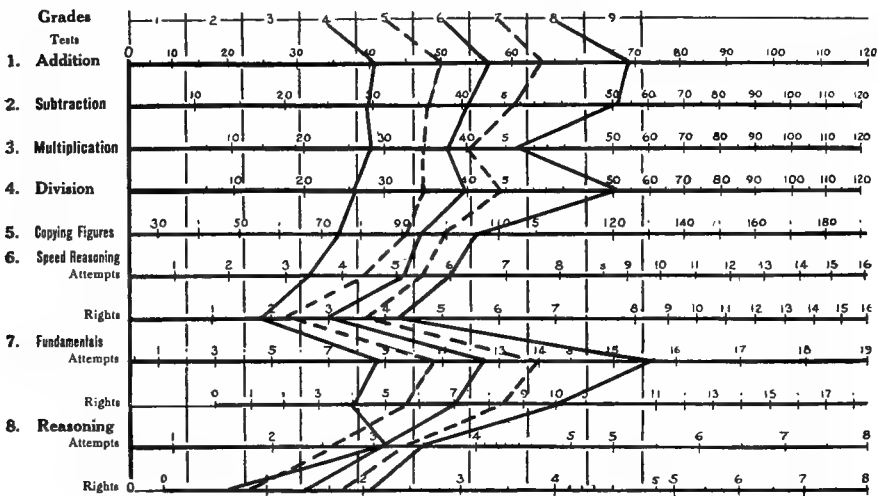


Fig. XXXIII

Graph of grade averages from the New York schools to show characteristics of the course of study. The overemphasis of the abstract work and the neglect of the reasoning are apparent at once.

In Fig. XXXIV are shown the graphs of two seventh-grade classes, one from a private school in New York City whose name the writer is not free to give; the other from one of the best of the New York public schools tested. It will be seen that the products of these two schools are very different. The private school makes every effort to motivate the children's work and the drill is incidental. The graph shows low scores in the tables and abstract work, but high scores in reasoning and an unusual degree of accuracy. The exact reverse is true of the public school. Both show lack of balance, and while, of the two, it is probable that the product of the private school has a lower time cost, and a greater



social value, it is also probable that further practice to bring the scores to standard would be of benefit. It is particularly to be noted, however, that in these two records is another proof of the relations between reasoning and speed and accuracy discussed above.

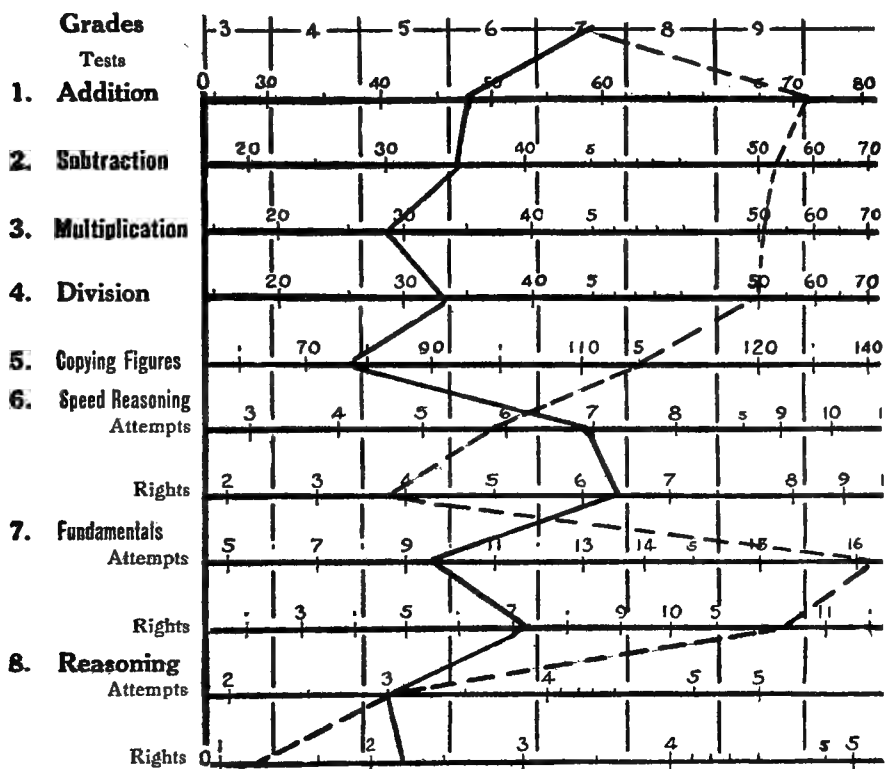


Fig. XXXIV

Comparison of the work of two schools. Solid line from the records of a 7th grade class in a New York private school; broken line from the best New York school tested. One is strong in reasoning; the other in abstract work. Neither are balanced. Both represent extreme and opposite ideas as to the proper course of study.

In Fig. XXXV are given the records of two selected 6A classes from New York schools. One school has lower scores than the others in the tables, but the scores of the second are better balanced and the elemental abilities are better organized. It is to be noted particularly that, in Test 7, it is not the school with the high score in the tables, but the one with the balanced development, that makes the better showing. In this case the difference is probably partly due to the difference in the children that attend the schools. The better school has vigorous Ameri-

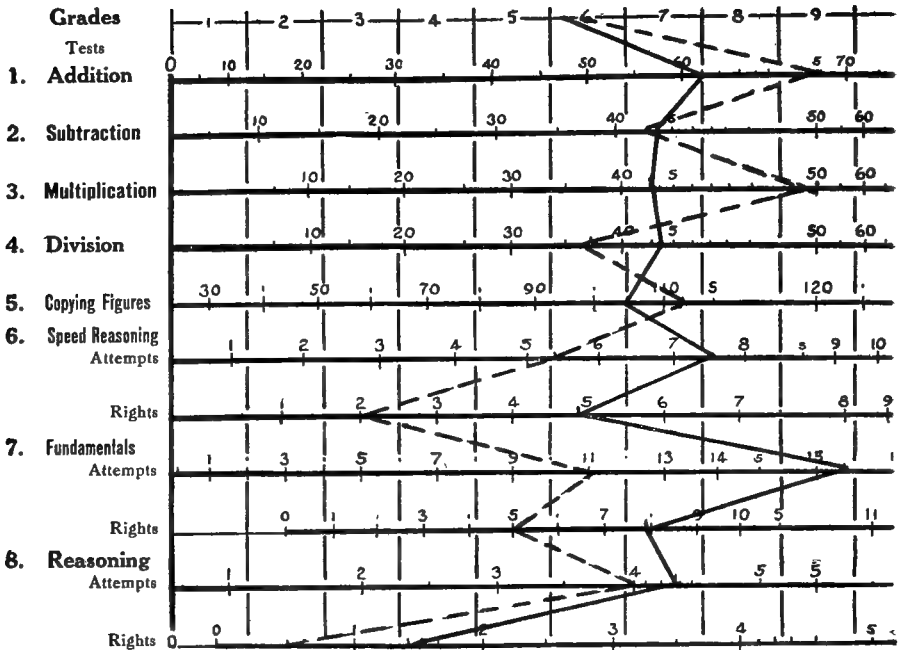


Fig. XXXV

Two 6A classes from New York schools—one having American children (solid line); the other, largely children of foreign parentage (broken line). The school with the higher scores in the combinations has nevertheless the lower scores in the important tests. Course of study and methods of work probably unsuited to the needs of the children.

can children; the other, poor children of foreign parentage. It is where such conditions exist that measurement and standard scores furnish the one true basis for proper adjustments of the daily programs and of courses of study; it is just here that drill is useless; that waste of the few precious years of school life is most to be deplored.

### Standardization Possible

A final illustration of the use of the comparative graph will be given. In Fig. XXXVI are shown curves drawn from the September and May records of a class in a Michigan school. In view of the preceding discussion it is a pleasure to be able to present proof that "standardization" of results is possible, but it is only fair to add that, while the grade averages fall nicely into line, the individual variation was still a troublesome problem.

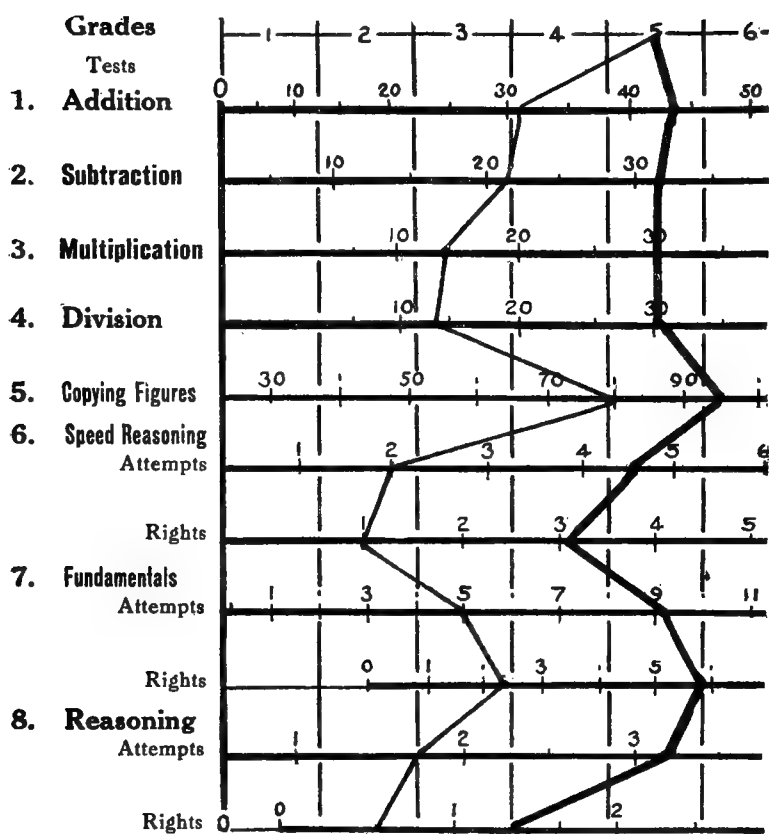


Fig. XXXVI

Record of a year's work with standard scores. The light line shows the standing of a fifth-grade class at the beginning of a year. The heavy line, the standing at the end of the year. The year's work has produced a good growth and the class is "standard" in everything except reasoning. From the records of the Liggett School.

#### Test of the Arithmetical Abilities of Certain Employees in a Large Department Store

In the use of any standard an important consideration must be the value of the thing standardized. Particularly is this true in mental measurements where the quantities measured are very intangible. In the Courtis Tests, for example, the abilities tested are recognized by both teachers and children generally as being those developed by the arithmetic work, but whether or not they are the abilities that should be developed by work in arithmetic to make that training of practical value in social activities is quite a different question.

The general abilities measured by the Courtis Tests are two: (1) ability to perform simple computation, and (2) ability to "reason." There is, perhaps, no question as to the essential nature of the first ability; the consensus of social opinion as expressed through many channels is that every individual needs as part of his mental equipment a certain degree of skill in such arithmetical work as that of Test 7. On the other hand, opinions differ widely as to whether or not the ability to complete the first fifteen examples of that test in twelve minutes without making errors in more than four examples, constitutes a reasonable degree of speed and accuracy to set up as a standard for the final product of the public school training in Arithmetic. Such a question, however, is no more a matter to be settled by opinion than is a question of size of engine needed to do a given piece of work. For satisfactory results the answers to both questions must be based upon measurement of actual conditions.

For the ability to reason the case is similar but the need for measurement much more urgent. Reasoning is itself undefined, and the work of many psychologists has made it evident that the activity called reasoning in one situation may be totally unlike the activity in a second judged to be precisely similar to the first. But the ability to grasp a situation, and to so select and adjust the essential elements as to produce a desired change is in every field of work the ability of highest value. Arithmetic has long been considered to develop such reasoning abilities. In each problem a situation is presented. To solve the problem the child must be able to grasp the situation, to make the proper adjustments called for by the fundamental nature of the problem. The results from this investigation prove that the ability to reason in arithmetical problems develops somewhat under school training. But is this so-called ability to reason the same as the ability called reasoning out of school? Does the ability developed in school transfer to the activities of daily life? If it does not, then a part of the arithmetic teaching is waste effort.

The nature of the work given in Tests 6 and 8 is similar to that of the simplest reasoning work in arithmetic. The distinctive elements of reasoning work—the analytical and selective phases—are emphasized in the tests, and the purely mechanical elements avoided. It would seem, therefore, that these tests should measure the more valuable elements of school training in reasoning. Has such ability a social value?

In the earlier sections of this report not only is more reasoning work advised for the New York schools, but a study of social and industrial conditions from this point of view, and an adjustment of the course of study upon the results of such an investigation is recommended. To make clear the nature and possibilities of such work as well as to determine as far as possible whether or not the proposed standards, derived only from the measurement of school children, were reasonable standards from a practical point of view, the measurement of a small group

of adults actively engaged in commercial work was attempted. The results are given as suggestions merely; their intrinsic value is small. The experiment was hastily planned and hastily executed; the control of essential conditions was poor. Nevertheless, results of interest were secured, and if the data are interpreted at their suggestive, rather than at their face value, the study forms an important addition to the report.

Through the kindness and co-operation of Mr. W. D. Earnest, chief of cadet staff, and Principal of the John Wanamaker, New York, Commercial Institute, the consent of Mr. Lynn, General Manager of the John Wanamaker's Department Store, New York City, was secured to a test of fifty employees of the company. As this meant setting free fifty members of the working force for half an hour on each of two mornings in the vacation season when the force is already reduced to its lowest limit, it will be seen that the company's consent to the test entailed both expense and inconvenience. The writer is glad to have this opportunity to express his appreciation both of favors shown and of the public spirit which alone can make such studies possible.

The group of employees was tested precisely as if they had been a class of children in school, except for a few necessary preliminary explanations. The group met in one of the company's school rooms, and were tested by one of the force of trained examiners.<sup>1</sup> Exactly the same tests and time allowances were used as with the children, and the same procedure in conducting the examination, and in scoring and tabulating the papers, was followed throughout. Forty-one complete records were eventually obtained.

The subjects represented seven different types of positions in the store, and in number were as follows:

Auditing Department .....	5
Bill Clerks .....	5
Cashiers .....	8
Clerks .....	13
Salesmen .....	7
Typists .....	3
Total .....	41

Two of the clerks and six of the salesmen were men. The average age of the group was approximately 19 years, ranging from 15 years to 30 years. The average term of service with the company, except for the group from the auditing department, was a little more than two years, ranging from two months to five years. The girls from the auditing department are products of the store's own training, and the term of service for them ranged from 8 to 14 years. The wages paid any member of the group is determined by position and term of service, not by position alone. The amounts varied from \$5 to \$15 per week. Of thirty-six who reported the last grade attended in the public school, 7 gave high school, 13 8B and 16 8A to 7A.

<sup>1</sup> See page 420.

It will be seen, therefore, that the group represents, for the most part, merely the product of the New York Public School course in arithmetic plus two years' actual experience in such positions as are open to those without special training. There is, of course, the selective action of the store upon the school product to be considered, and the results show, if nothing else, the degree of ability in the fundamentals of arithmetic that is needed to obtain and hold such low-salaried positions, so far as such abilities are factors.

It was not possible to attempt more than a general study of the work of the different groups. The cashiers do little more than make change, the salesmen and clerks have a little computation work in handling sales slips, store records, etc., the bill clerks have the most varied work, and work demanding the most intelligence and judgment, the members of the auditing department have the largest amount of abstract work, but it is routine in character. The auditing department, and to a lesser extent the bill clerks, are thus the only positions in which arithmetical ability would have more than a slight influence in determining the fitness of an applicant. In none of them, however, would arithmetical ability be a major factor.

With these facts in mind the reader should attempt to predict the scores made by the various groups, if for nothing else than to realize that no knowledge of the arithmetical needs of various types of workers exists. The individual scores made by the auditors, bill clerks, and five of the cashiers selected on a basis of length of term of service, the averages for each of the groups, and finally the 8th grade standard scores and the difference between each average and the standard are given in Table XXXVII. In Fig. XXXVII the differences from the standard are shown graphically, the scales for the various figures being drawn so that (approximately) equal distances from the standard line represent relatively equal differences in the different tests. That is, a difference of one example in Test 6 corresponds approximately to a difference in score of 30 figures in Test 5.

The results show that addition is the ability most generally affected by the work in the store, although there are marked changes in subtraction, and in the abstract work as well. Multiplication and division are very slightly affected, and in speed of copying figures the deviations from the average are slight. In Test 7, abstract work, the agreement with the standard is close except for the two types of work in which the greatest amount of practice occurs, the bill clerks and the auditors. In general, therefore, on the basis of these results, a child attaining the standard scores in the tests for abstract work would have at least an average equipment with which to enter upon business life.

The results in the reasoning tests are quite uniform and extremely low. This may mean (1) that the tests themselves are poor measures of arithmetical reasoning, (2) that the reasoning in arithmetic and the reasoning in the work of the store are two distinct and unrelated types,

Table XXXVII—Scores Made by Certain Employees in Wanamaker's Department Store, New York City

## Part A. Individual Scores

POSITION	TEST 1	2	3	4	5	6		7		8		YEARS OF SERVICE
						Ats.	Rts.	Ats.	Rts.	Ats.	Rts.	
<b>Auditors:</b>												
A.....	90	70	32	40	125	4	2	11	8	2	2	10
B.....	120	118	57	66	177	5	1	38*	34*	2	2	10
C.....	89	97	55	80	128	6	3	16	12	3	1	14
D.....	98	90	48	48	122	6	3	23*	13*	1	1	8
E.....	100	57	55	40	90	4	0	17	10	2	0	10
<b>Bill Clerks:</b>												
A.....	91.	55	55	57	125	6	6	19	13	2	2	3.5
B.....	80	48	40	41	105	4	2	16	14	1	1	2
C.....	80	65	45	50	110	5	4	16	15	3	2	3
D.....	87	51	52	58	138	6	5	21*	18*	3	3	7
E.....	98	55	32	30	123	4	8	17	13	2	2	2.8
<b>Cashiers:</b>												
A.....	72	40	40	60	122	4	3	14	11	3	2	3.5
B.....	80	60	40	60	135	4	1	9	5	1	1	8
C.....	85	45	40	42	135	4	1	8	6	0	0	1
D.....	63	45	40	40	135	3	2	17	14	3	2	8 mo.
E.....	66	50	55	43	113	6	4	17	10	2	1	8 mo.

## Part B. Average Scores

POSITION	TEST 1	2	3	4	5	6		7		8		YEARS OF SERVICE	NUMBER OF PERSONS
						Ats.	Rts.	Ats.	Rts.	Ats.	Rts.		
Salesmen.....	68	53	40	51	100	4.1	2.6	12.9	7.7	2.0	0.9	2.7	7.2
Cashiers.....	75	45	37	56	123	4.0	1.9	12.4	7.7	1.6	1.2	1.8	8
Typists.....	78	45	44	48	131	3.0	3.0	14.7	9.7	2.0	1.3	2.2	11
Clerks.....	81	56	49	53	117	4.8	3.0	14.1	9.7	2.1	1.5	1.6	13
Bill Clerks.....	87	55	45	47	120	5.0	4.0	17.8*	14.6*	2.2	2.0	2.7	5
Auditors.....	99	86	49	55	128	5.0	1.8	21.0*	15.4*	2.0	1.2	10.4	5
Entire Group.....	84	56	45	55	119	4.9	3.2	14.4	10.4	2.4	1.8	3.1	41

## Part C. Deviations of Average from Standard Scores

POSITION	TEST 1	2	3	4	5	6		7		8	
						Ats.	Rts.	Ats.	Rts.	Ats.	Rts.
<b>Standard Scores:</b>											
Eighth Grade.....	63	49	49	49	117	7.8	7.0	14.4	10.0	4.8	4.0
<b>Deviations from Standard:</b>											
Salesmen.....	+ 5	+ 4	- 9	+ 2	-17	-3.7	-4.4	-1.5	-2.3	-2.8	-3.1
Cashiers.....	+12	- 4	-12	+ 7	+ 5	-3.8	-5.1	-2.0	-2.3	-3.2	-2.8
Typists.....	+15	- 4	- 5	- 1	+14	-4.8	-4.0	+ .3	+ .3	-2.8	-2.7
Clerks.....	+18	+ 7	0	+ 4	0	-3.0	-4.0	- .3	+ .3	-2.7	-2.5
Bill Clerks.....	+24	+ 6	- 4	- 2	+ 3	-2.8	-3.0	+3.4*	+4.6*	-2.6	-2.0
Auditors.....	+36	+37	0	+ 6	+11	-2.8	-5.2	+6.6*	+5.4*	-2.8	-2.8
Entire Group.....	+21	+ 7	- 4	+ 6	+ 2	-2.9	-3.8	0	+ .4	-2.4	-2.2

\*Computed scores. Entire test finished in less than time allowed.

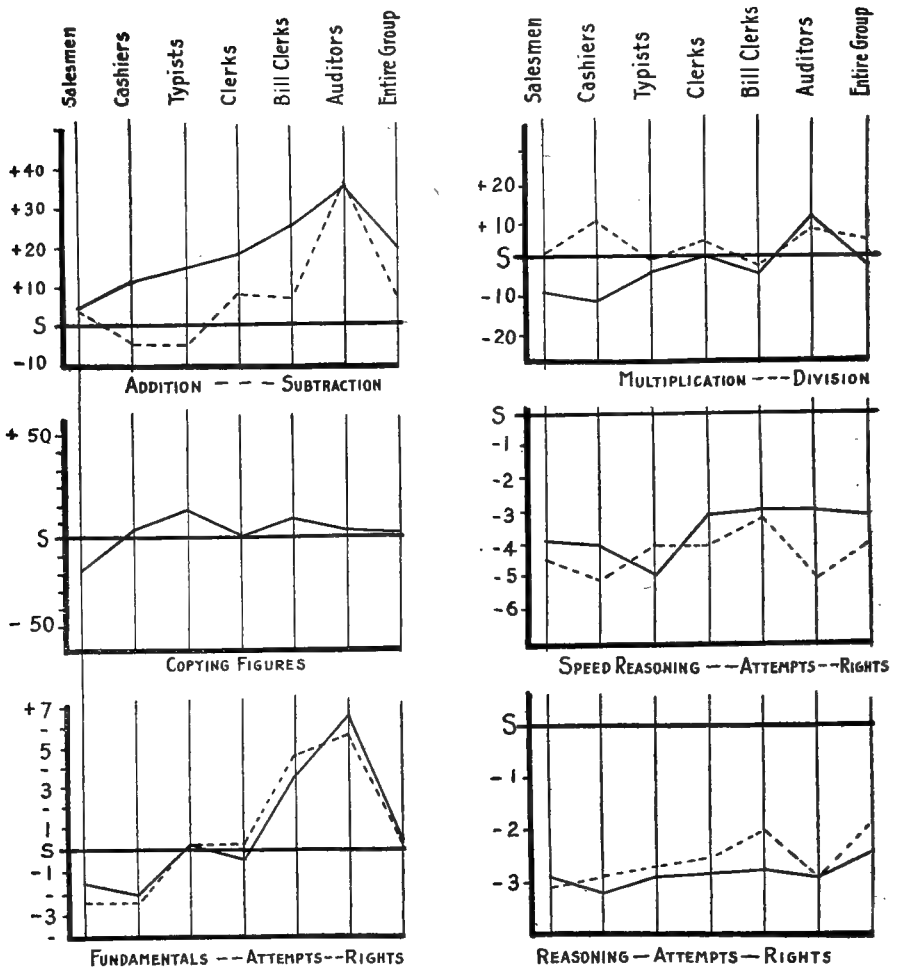


Fig. XXXVII

and (3) that the subjects of the experiment are engaged in work of such routine character that little demand is made upon their reasoning abilities. Probably all three of these statements are true in part. Fortunately, as far as the tests are concerned, measurements of many schools have proved that some schools develop the abilities measured in Tests 6 and 8.<sup>1</sup> Such schools are usually the smaller, more progressive schools. On the other hand, the large school systems quite generally have low scores in reasoning. The tests unquestionably measure the abilities concerned in reasoning work in arithmetic, but that those abilities are of value needs demonstration. Any condemnation of the tests on the basis

<sup>1</sup> See page 491.



of these results, however, must carry with it the condemnation of the problem work of the present courses in arithmetic, most of which is much more complex than the simple work of these tests. The results of the present investigation emphasize again the need for a careful study of the work of the schools both in relation to social conditions and from the standpoint of the evaluation of the changes which are actually being produced in the schools. What ought to happen when a child learns to reason in arithmetic? What really does happen under present conditions?

In view of the previous discussions it is interesting to note that the bill clerks characterized by Mr. Earnest as holding positions calling for the greatest exercise of individual judgment have the highest scores for examples right in the reasoning tests and show the greatest accuracy in Test 7, thus confirming the conclusions reached from the results from the school children. In this connection it should also be noted that the auditors who made the highest scores in abstract work are the most inaccurate in the reasoning, although attempting as many examples as any other group. The antagonism of drill and reasoning has also been previously noted.

An interesting case of possible transfer of ability is seen in the scores of the typists. Their average speed in copying figures exceeds that of the other groups, and their accuracy in both the abstract and reasoning work is high. Speed and accuracy are essential characteristics of all satisfactory copying work on the typewriter.

An interesting set of scores are those of the cashiers. Their work in the store is almost wholly mental. Any effect on their scores is apparent only as an increase in addition and multiplication. Their scores in the other tests are low in spite of the fact that the two latest additions to the force, individuals D and E in the table, have had two or more years in the high school, and made the highest scores of the group. The effect of mental work in arithmetic is one of the debated questions. The results do not agree at all with many opinions on the subject, and suggest that this, too, needs experimental investigation.

The results throw some light on the question of possible speed in the abstract work. In Test 7 two of the auditors finished before the time, one of them completing the entire nineteen examples in six minutes and having but two incorrect. In the tabulations the scores of this individual are computed for twelve minutes and used in place of the actual scores. Similar computations were made in the case of three other individuals who completed the work within the time limit. Compared with 38 examples attempted and 34 right the standard score, 14.4 Attempts, 10.0 Right, is not excessively high.

In fact, so far as these adults are representative in their abilities the standard scores, except in reasoning, would seem to be about right. Such standards are not meant to be goals that can be reached only by

unusual ability or extraordinary effort, but rather minimum and optimum scores.

Table XXXVIII—Distribution of Scores on the Basis of Accuracy in Test 7

The score in accuracy is the per cent. the examples right are of those attempted. 75% means an accuracy of from 70% to 79% inclusive.

GROUP	No. IN GROUP	CLASSES											
		100%	95%	85%	75%	65%	55%	45%	35%	25%	15%	5%	0%
Employees .....	41	2	2	2	8	13	5	8	1	1	1	.....	.....
Per Cent. of Total.....	.....	5%	5%	20%	32%	12%	20%	2%	2%	.....	2%	.....	.....
Children <sup>1</sup> .....	27,171	5%	4%	11%	14%	15%	9%	8%	6%	5%	2%	2%	5%

<sup>1</sup>From Table XXV, page 467.  
Of the 41 individuals in the group of adults, 2 or 5% of the group had perfect scores, 5% also had scores whose accuracy was from 90% to 99%, 20% of the group were of 80 to 89% accuracy, and so on. In the table is given also the corresponding figures for school children. The results are shown graphically in Fig. 7.

FREQUENCIES

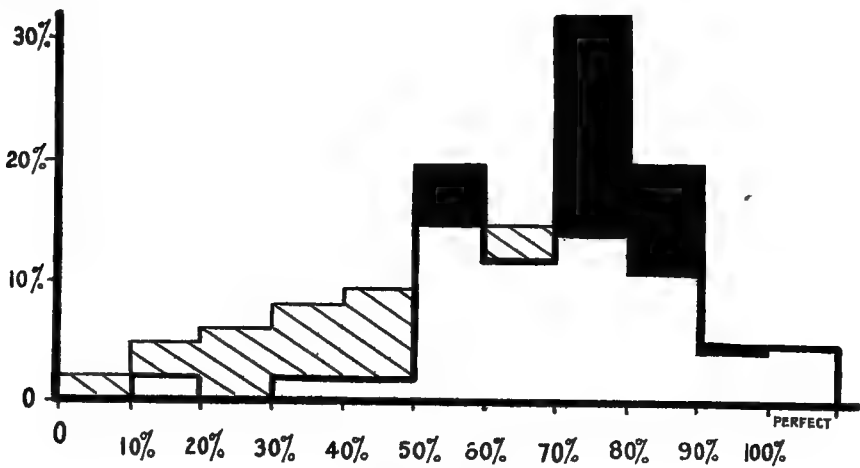


Fig. XXXVIII

Comparison of distribution of scores for accuracy of work in Test 7 for two groups, one of 41 employees at Wanamaker's, the other of 27,171 New York school children in all grades from 4A through high school. Horizontal scale shows accuracy of work. Vertical scale indicates the number in each group, expressed as per cent. of total membership of the group, making each degree of accuracy. The part in white is common to both groups. The part in black is the excess of the employees over the school children. The shaded part represents the school children that fall below the employees. Either the influence of commercial work, or the selective action of the store, has eliminated the grossly inaccurate. The average accuracy of the group, 72 per cent., is slightly better than that called for by the standard scores.

The results of this test have a bearing also upon the question of accuracy. In Table XXXVIII and Fig. XXXVIII are given the distribution of the individual scores in accuracy in Test 7. It should be noted that the distribution of the school children is a normal distribution covering the entire range of the scale. The distribution of the other group, however, has been skewed toward the upper end of the scale. Very few fall below the 50 per cent. point, 84 per cent. of the group are included between the limits of 50 per cent. and 90 per cent. as compared with 49 per cent. of the children. This may be due to the selective action of the store itself, or to the practice effects of the commercial work, or to both. In any case it is evident that gross inaccuracy will not be tolerated.

The range of variation, however, is greater than the writer expected, and the average score, 72 per cent., surprisingly low. This probably means that the conditions under which the tests were given emphasize speed, and as speed and accuracy are antagonistic the results show greater inaccuracy than the same individuals would show if working at normal speed. This suggests that in future tests of this character it would be better to warn the subjects that in the longer tests they should not hurry, as accuracy will be considered as well as speed.

However, accepting for speed and accuracy the average of this group as representative of the degree of ability demanded by the store of those who apply for positions, it is possible to measure the efficiency of the public schools in terms of this measure. In Test 7, for instance, the average score of the adult group was 14.4 examples attempted and 10.4 examples right. Of the 1,187 8B boys and 1,053 8B girls measured, 610 or only 51 per cent. of the one, and 596 or only 56 per cent. of the other equal or exceed these records. On this basis alone, therefore, the store would reject nearly one half of even those applicants who had completed the full grammar school course.

A suggestive result is the close agreement of the two distributions at the upper limit. It may well be that the extreme accuracy of absolutely perfect work or even of from 90 per cent. to 99 per cent. is due to the possession by the individual of peculiar mental characteristics, and therefore beyond the reach of training. If so, however, a psychological study of such individuals might yield knowledge that would enable the school to train each individual to at least his highest accuracy. It seems strange that so important a field as the psychological activities of the classroom have been so long neglected by the psychologists.

The most important conclusion to be drawn from the preceding discussions is that although the individual variation shown in these results is of the same character as that found in the scores of children, apparently for many of the tests the range of variation is much smaller. That is, a class of fifty bill clerks, for example, selected as of equal ability by the head of the department would show less difference between the highest and lowest scores made than a class of fifty children selected as of equal ability by the promotion machinery of the school.

The size of the different groups is, of course, too small to admit of any valid judgments as to the range of variation, but as soon as definite degrees of ability are proved by measurement to be required for given social and industrial positions, the lack of standards which now exist in school work in arithmetic will be appreciated at its true importance. This test apparently shows plainly that greater ability is required for some positions than others, and that the degree of ability is changed by practical experience. On the other hand, the range of variation that is found even in these small groups proves that arithmetical ability is but one of many factors in determining the efficiency of an employee. The slow inaccurate worker, by conscientious checking, may produce results superior to those of every other member of the force, while the most gifted and best trained employee as far as arithmetical ability is concerned may be utterly unreliable and worthless because of his low ideals. That is, the supreme work of the schools should be to develop in children those ideals of personal responsibility and service that make for both growth and efficient discharge of social duties. It is unfortunate that our schools are not organized as yet on such a basis. At the same time it should not be forgotten that the efficiency of the individual inspired by even the highest ideals is conditioned by his mental equipment. If all the auditors, for example, were actuated by the same worthy motives it is extremely probable, in view of these results, that their relative value in the auditing work could be approximated closely from a comparison of their scores in these tests. In other words, in this case, as in so many other of the points discussed in this report, the results but serve to prove the possibility of, and the need for, more extended and more detailed investigations of the same kind.

### Summary

From the discussions in this and in the preceding section it should be evident that the teaching of even the fundamentals of arithmetic is a much more complex process than has been thought. That all the defects of present conditions can be immediately remedied it is not reasonable to suppose. The methods and tests used in this investigation and the standards set represent little more than the first attack upon a problem that must engage the best efforts of school men through many years. At the same time the investigation is a first attack, and the results indicate clearly both that efficiency is dependent upon a more complete knowledge of what is actually happening to children as they pass through our schools, and that the comparative test is a valuable tool for educational investigations.

Whether or not it is possible or expedient to develop "standard" ability in all children ought not to be decided by opinion but by trial. The experience of the writer through several years has yielded no data upon which to base predictions, either that present conditions cannot be changed

or that "standardization" has any stultifying effects upon the teacher. On the contrary, the strengthening influence of work undertaken to remedy defects revealed by measurement has been most marked and the response of progressive teachers to the possibilities of clear aims, definite knowledge of the defects of individuals, and a means of measuring the effects of teaching effort has been most gratifying. The possibilities for further development of the work in arithmetic and in other subjects seem very great.

## Section VII

### Standard Scores in Relation to Supervision and Administration

#### Introduction—Point of View

Throughout the preceding sections the point of view has been mainly that of the teacher. The results from standard tests, however, are of importance also from the point of view of supervision and administration. While the use that may be made of much of the material is determined wholly by the interests of the person considering the results, throughout the discussions of this section the conclusions emphasized will be those of value to the principal, supervisor, and superintendent.

It should be remembered, however, that much of the work, particularly the final preparation of the report, was done under conditions of haste and pressure that prevented the close analysis and study the writer had hoped to be able to give to the data. Only the grosser features of the results can be indicated and the illustrations in this section are illustrations merely—suggestive of problems in need of study or indicative of methods that might be used to advantage. The complete possibilities of the data secured should not be measured by such brief exposition of their more salient features.

#### Measurement of Efficiency of Teacher

The active agent in education is the teacher. In the last analysis the success of all movements for reform, of all efforts toward greater efficiency, is absolutely conditioned by the extent to which the coöperation of the teacher is secured. The education or elimination of weak and incapable teachers has heretofore received too little attention from school authorities, probably because available methods of judging of the ability of teachers have been no better than those employed in determining the fitness for promotion of the child. Measurement of children's ability with standard tests, however, furnishes also a measure of the teacher's ability. For of two teachers working under equal conditions, the one whose class shows the greater growth is the more able. It is a matter of regret that no illustration of this point can be given; but in exactly

similar fashion a single test of a school will disclose at once any grades within the school whose work is out of the ordinary.

For instance, Fig. XXXIX shows the graph of the grade averages from one of the poorer schools tested. For comparison the results from a Michigan school in which standard tests have been used for several years are also shown. The irregularities in the curves of the New York school indicate very clearly that, in the fifth and sixth-grade classes, poor work is being done. The curves are consistently depressed in all the simple tests and in the others, although the curve for examples attempted may rise, that for examples right falls. The most probable cause for such consistent results is a poor teacher in the fifth grade, but it is impossible to tell without a knowledge of the conditions in the school. An epidemic of contagious diseases may have led to many prolonged absences in these grades. But with a knowledge of conditions it is perfectly possible to determine the exact cause, and, in the case of poor teaching, the curves form an impersonal record of the result that carries weight in any dis-

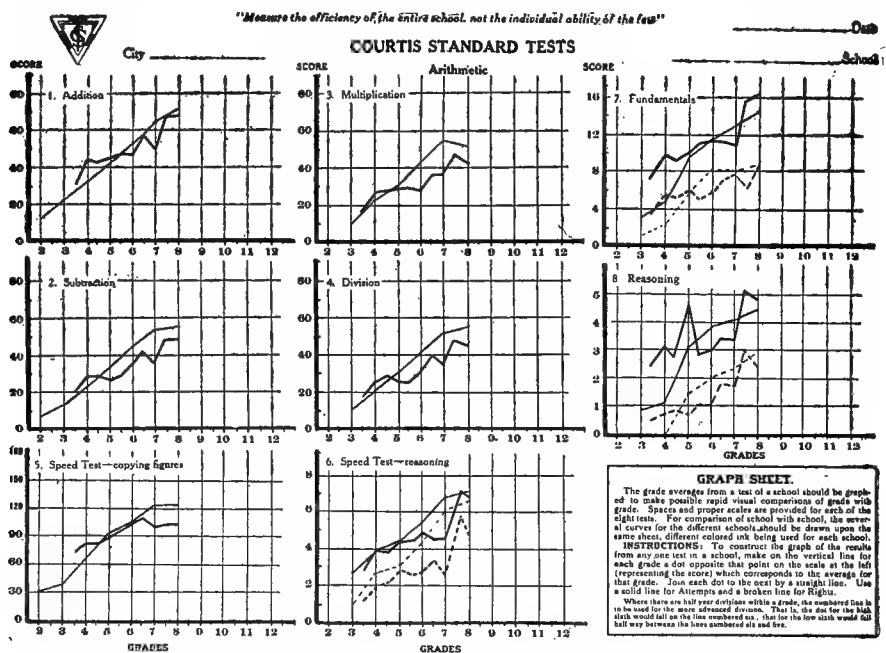


Fig. XXXIX

Graph of the grade averages of two schools. Heavy lines a New York public school; light lines a Michigan school in which standard tests have been used for several years. Solid lines, attempts; dotted lines, rights. In the New York school the irregularities in the curves are indications of inefficient conditions, needing attention of principal or supervisor. Probable cause—able teachers in fourth and eighth grades; poor teachers in fifth and sixth.

cussion of the situation with the teacher concerned. The knowledge that the effect of work done can be measured and compared with the effects of similar work by others is always a powerful stimulus for workers in any field. The principal that does not avail himself of this use of the data, from comparative tests, misses an opportunity to check his own work; for it is distinctly the duty of the principal to see that the causes of such irregularities are removed at the earliest possible moment.

The problem of inefficient teachers must be a serious one so long as they are continued at work year after year. In a test of a large school there may be marked variation in scores from class to class in the same grade. While, as pointed out in the previous section, the actual difference between the best and the poorest classes is small for arithmetic when compared with the range of individual variation, the total effect of a poor teacher upon a class may be very bad. In Fig. XL the upper and lower line of each shaded portion was made by plotting the average of the highest and of the lowest class in each grade of a large Manhattan

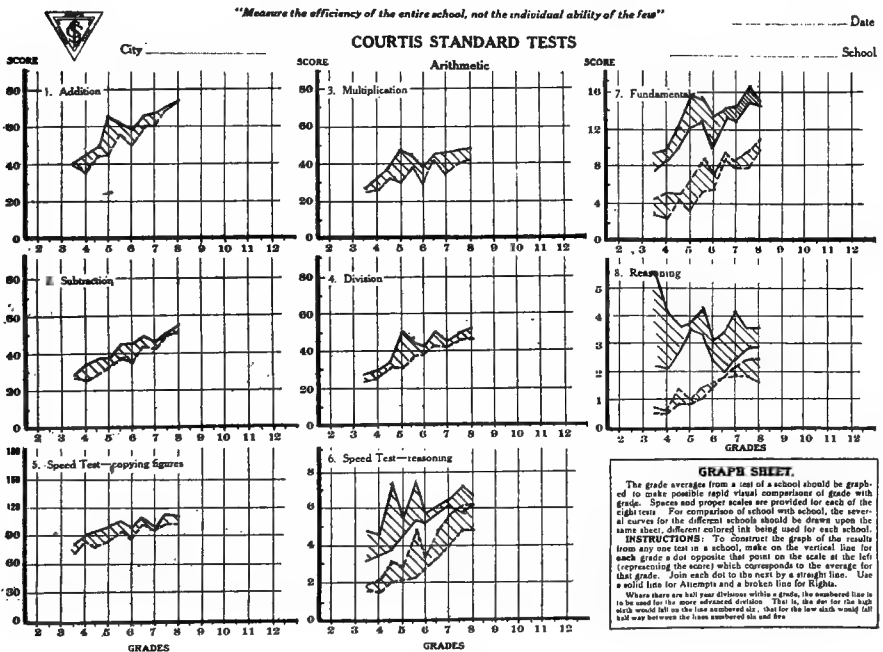


Fig. XL

Variation in the achievement of classes of the same grade and school. The upper and lower boundaries of the shaded portions were drawn by plotting points to represent the grade averages of the best and worst sections of each half grade and drawing lines through all the points of each kind. The record of any class will fall somewhere between the limits for its grade. The amount of the variation shown is much greater than efficient conditions would warrant. From one of the best New York schools.

school. The shaded portion, therefore, represents the range of variation in the achievements of the different classes. Such conditions are indefensible from the standpoint of efficiency and but serve to emphasize the impossibility of controlling conditions without standard measures of results.

Comparison of Schools

Such general graphs of grade averages can be used to compare the results from schools in which different methods are employed. Previous mention has been made of the inclusion in the test of schools examined of two high schools, one a general high school and the other a commercial high school. The results from the tests in these schools afford a basis for interesting illustrative comparisons, although the data are insufficient, and the conditions of the comparisons too crude, to warrant any final statement.

The results are presented graphically in Fig. XLI, boys and girls separately. The curves for boys are drawn at the left of each plot, those for girls at the right. In Tests Nos. 6, 7, and 8 the results in attempts are shown in the upper part of the figure; rights below. The

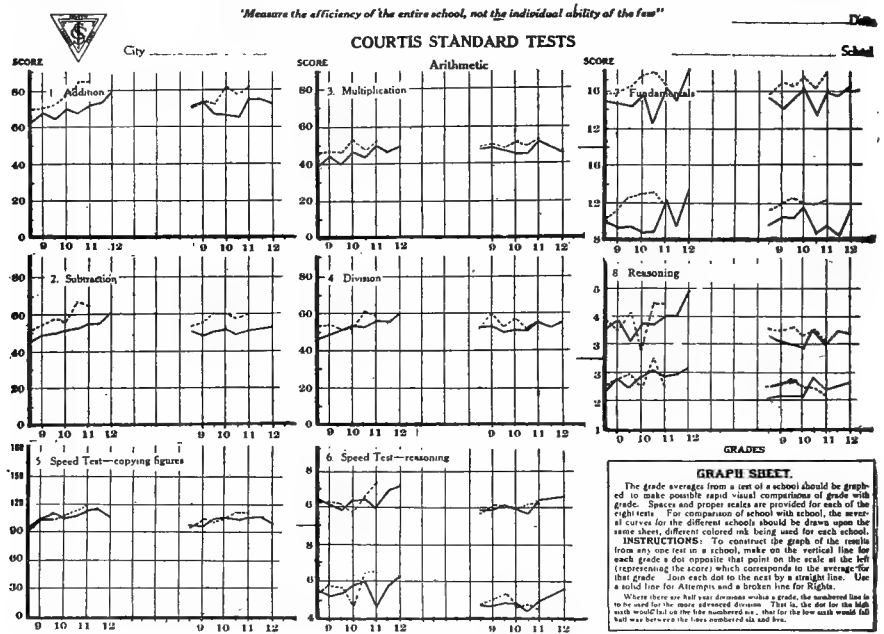


Fig. XLI

Comparison of a general and a commercial high school. Solid line, general high school; dotted line, commercial high school. Lines at the left, boys; at the right, girls; lines above in Tests 6, 7, and 8, attempts; below, rights.



grade averages from the general high school are represented by the full lines; from the commercial high school by dotted lines. The pupils were examined in their "official class," and, while these do not exactly correspond to grades 9, 10, 11, and 12, they do so more closely than to any other classification that could be adopted. It will be seen that the arithmetical abilities of boys in the first term of the commercial high school are in many tests superior to those in the corresponding classes of the general high school, although this is not true of the girls. So far as differences in the work of the two schools can be observed, the work of the commercial high school produces marked differences only in the addition and subtraction speed tests and in Test 7.

Since, at the time the tests were given, the 9A classes had had but two months' work in the commercial high school, this would seem to indicate that boys electing the commercial work have relatively a higher initial ability in the fundamentals than those who elect the general high school work. This difference should be kept in mind during the discussion which follows.

A measure for comparing the work done by two schools is sadly needed in educational discussion, and comparative tests and standard scores furnish such a measure. If the number of children per hundred reaching or exceeding a standard score at the beginning of the year is compared with similar data at the end of the year the differences show the actual effects produced by the teaching effort.

In the present instance, of course, no measures of growth are at hand, but in Table XXXIX is given by grades for these two schools the number of children per hundred who equal or exceed the standard scores in Tests 7 and 8, boys and girls separately; also the differences between the results for each grade and sex. As these two tests represent the most important tests, as well as those in which the greatest and least differences occur, they afford a good basis for judging how far the effects of the two courses differ.

It will be seen that the commercial high school course affects boys more than girls. In Test 7, attempts, the differences for boys are practically constant, and for girls decrease. In other words, the boys in the commercial high school show no greater development in speed of work than they would have done had they taken the other course, while the girls show less. In accuracy there is quite a gain. Half of the boys and a third of the girls are more accurate than they would have been had they not taken commercial work. For all the results in Test 8 the differences are insignificant. In other words, the differences in the effect of the work of the two schools are slight.

The results seem very remarkable. That boys in a general high school in which arithmetic is not a part of the course should so nearly hold their own with boys in a commercial high school, engaged in constant practical work—bookkeeping, commercial arithmetic, etc.—and preparing for a commercial life, seems very strange; especially in view of



the inaccuracy and low scores shown by many in both schools. The irregularities in the curves are not an indication of desirable conditions, and the lack of growth in reasoning power is not encouraging. In the lower schools unsatisfactory achievements in the fundamentals of arithmetic may possibly be excused on the ground of crowded courses and more important work; but that such conditions are not changed during the period of preparation for commercial life is not favorable to the success of the work of the commercial courses. It may well be, however, that, as long as unsatisfactory conditions prevail in the elementary school, nothing better is possible in the higher school. Evidence is not wanting that the early grades are the critical periods in the mastery of fundamental habits. At any rate, there are here many questions in urgent need of investigation and study.

### Effects of Special Classes

The gathering of data from many schools in a system as large as that of New York brings the examiner in contact with many types of schools, with great variations in method and administration. How do these variations affect the product?

Quite generally throughout Manhattan segregation of boys and girls, either in separate buildings or in separate classes in the same building, is the rule. In the larger schools of Brooklyn segregation in classes is the rule, although many mixed classes are formed. In Brooklyn also, because of the crowded conditions, there are many "part-time" classes. Further, in any school, there may be found classes for special children, the "E" classes. Some principals, however, use these as rapid advancement classes; others by their own testimony as ungraded classes for the mentally dull. Do these varying conditions affect the work of the children, and, if so, how? is a question that must be of vital concern in an efficient administration of the system.

A little consideration will make it evident that the effects from a single cause will be but one of many factors in the resultant achievement of the classes. If a direct experiment were undertaken to measure a given effect, care in the control of the conditions of the experiment could eliminate the effects of all the factors except the one being measured. In this case, however, no such control was exercised, and judgment as to the effect of any cause must be based upon slight general tendencies observed in the examination of many cases.

The general method of measuring such a general tendency is to determine the relative position of each case with respect to the average for the entire group and to combine these measures of position. For example, ninety-three classes, each of 4B grade, were examined. The average scores of these classes in Test 7, attempts, ranged from one of six examples to two of twelve examples. The average was approximately nine examples. Of these classes, five were on part time. Of these five, one

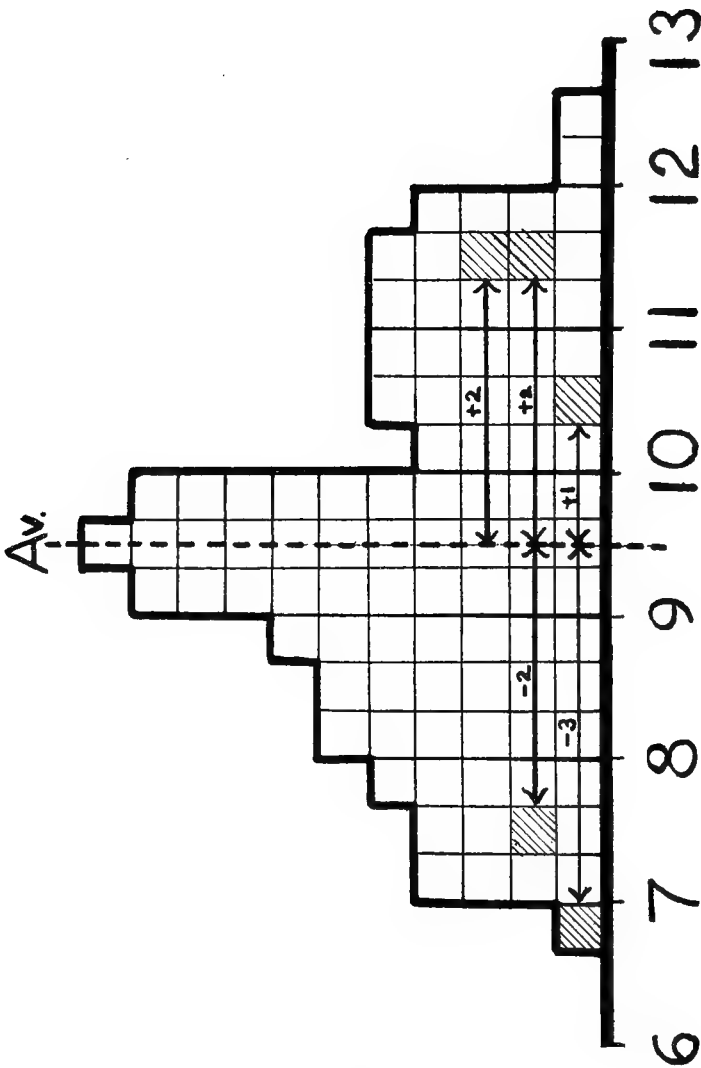


Fig. XLII

Measurement of resultant tendencies; part-time classes. The figure shows the distribution of 93 4B classes in Test 7. Each small square represents a class and stands in a position over the scale corresponding to the score of the class. The part-time classes are shaded. The position of the average score is indicated; also the differences between the average score and the score of each of the part-time classes.

had a score of six examples, or 3 below the average (nine examples) of the entire ninety-three classes. A second had a score of seven examples, or two below the average. The score of the third was ten examples, or one above the average, while the scores of the remaining two were each eleven examples, or two above. Combining these measures of relative position ( $-3, -2, +1, +2, +2$ ), the resulting measure is 0. That is, the scores of the five part-time 4B classes were so related to the average of all the 4B classes measured that the score of any part-time class selected at random was as likely to fall above the average as below.

These conditions are represented in Fig. XLII. Each class is represented by a small square in proper position with respect to the scale to represent its score. The positions of the average and of the part-time class in respect to the average are also indicated.

For nine part-time 4A classes the resultant measure computed in similar fashion was  $-13$ . In order to compare the effects in various grades this measure was reduced to an average amount per class by dividing the  $-13$  by 9. The answer,  $-1.44$ , shows that the tendency of the part-time classes in the 4A grade is to fall below the average of 4A classes generally, and the result is directly comparable with other similar measures for part-time classes in other grades.

In Table XL are given the measures of resultant tendencies of all the classes tested by grades and types of class. It will be noted that girls' classes excel all others slightly in speed, markedly in accuracy. Mixed classes occupy a place between the segregated classes, as naturally

**Table XL—Measurement, by Relative Position, of Resultant Tendencies of Different Types of Classes**

(For explanation of measure, see text)

Test 7

Grades	Boys' CLASSES			GIRLS' CLASSES			MIXED CLASSES			PART-TIME CLASSES			"E" CLASSES		
	No.	Atts.	Rts.	No.	Atts.	Rts.	No.	Atts.	Rts.	No.	Atts.	Rts.	No.	Atts.	Rts.
4A	25	+ .20	+ .16	24	+ .42	+ .58	31	+ .39	+ .10	9	-1.44	-.44	2	-.50	-1.00
4B	32	+ .03	+ .19	29	-.34	+ .62	27	+ .26	+ .48	5	.00	-.80	5	+1.00	-.80
5A	29	-.27	-.31	27	.00	+ .15	29	.00	-.21	6	+ .33	.00	5	+1.00	-.20
5B	32	.00	-.25	30	+ .43	+ .47	31	+ .55	-.48	2	+2.00	+ .50	5	-.60	-.20
6A	34	+ .29	-.26	40	+ .12	+ .40	19	+ .58	+ .47	..	.....	.....	1	+2.00	-1.00
6B	36	-.44	-.47	35	+ .06	+ .40	19	-.26	-.31	4	.....	.....	4	-1.00	+ .50
7A	29	.00	-.45	27	+ .55	+ .74	20	-.15	-.75	..	.....	.....	..	.....	.....
7B	28	-.32	-.11	28	-.07	+ .86	20	+ .05	+ .15	..	.....	.....	..	.....	.....
8A	28	-.71	-.53	29	+ .45	+ .72	16	+ .12	-.06	..	.....	.....	..	.....	.....
8B	28	-.04	-.04	30	+ .25	+ .45	18	+ .11	-.06	..	.....	.....	..	.....	.....
Average	301	-.126	-.207	289	+ .187	+ .539	230	+ .165	-.08	22	+ .22	-.18	22	+ .32	-.45

The table shows that in general the scores of girls' classes exceed those of the corresponding boys' classes, the effect being greatest in accuracy and in the sixth and seventh grades. Mixed classes fall between the other two. For the part-time classes, the results by grades apparently indicate that part-time, while injurious in the lower grades, is beneficial in the higher grades. The small number of classes tested, however, prevents the results having meaning except as an illustration of method. The "E" classes show variable results.

follows. The effect of part-time classes is, on the whole, slightly toward increased scores, but the sign of the effect reverses in going from higher to lower grades. For the "E" classes opposing usage tends to obscure any marked effect. The resulting tendencies are variable, but, on the whole, indicate increased speed and decreased accuracy.

That the results have much value in themselves is to be doubted; but as indicating a method and a field of work they are of great value. The differences between the scores of boys and girls,<sup>1</sup> and the prevalence of part-time classes in the lower grades, make these subjects important ones for further study. Carefully planned experiments to determine the basic facts in regard to sex differences should be carried on through several years. The effects of part-time and of other variations in the time allotments should also be evaluated.

### The Effect of Special Methods of Drill

In the talks of the writer with the principals of the various schools visited so many references were made to the frequent use of short practice exercises in the four operations that it seemed wise to include in the questionnaire sent to the principals the following:

"Do you make use of 'speed tests,' 'straight ahead' work, or other tests of similar nature in your regular work?"

The answers suggested were:

<i>Answers</i>		<i>In Grades</i>
No—Yes		
Daily	Often	{ 4-A
		4-B
Weekly	Rarely	5-A
Monthly		5-B, etc.

The replies received give information on this point for 803 classes of the 903 examined. These data make possible a study of the effects of this form of drill.

The scores in Test 7 of the 803 classes were sorted into six groups on the basis of the answer given (daily, weekly, etc.) and the resultant tendency of each group measured following the procedure given on page 509.<sup>2</sup> The results are given in Table XLI. It should be remembered, however, that the use of such special drill exercises is but one of many important factors determining final ability. The resultant effect, if any, need, therefore, not be large, but must be consistent, to be significant. Such a study can be made only where the number of classes is large, as in the present instance.

<sup>1</sup> See page 528.

<sup>2</sup> That is, the amount and quality (+ and —) of the difference of each class average in Test 7, attempts and rights, from the average score for its grade was found. For each grade and group, these differences were combined, both quality and amount being considered, and the resulting sum divided by the number of classes.

Table XLI

MONTHLY

DAILY

GRADE	ATTEMPTS			RIGHTS			ATTEMPTS			RIGHTS		
	No. of classes Above Av.	No. of classes Below Av.	Meas.	No. of classes Above Av.	No. of classes Below Av.	Meas.	No. of classes Above Av.	No. of classes Below Av.	Meas.	No. of classes Above Av.	No. of classes Below Av.	Meas.
SB.....	14	11	— .22	4	6	— .53	5	5	57	2	0	+ .05
8A.....	15	12	+ .33	7	4	+ .49	5	6	+ .76	0	2	+ .80
7B.....	16	12	+ .13	4	4	+ .45	5	8	+ .13	0	0	— .25
7A.....	16	10	+ .37	7	6	— .01	5	5	+ .32	2	3	— .06
6B.....	19	20	— .10	1	10	— .50	4	4	+ .37	3	1	+ .40
6A.....	20	20	+ .30	7	10	— .16	12	5	+ .29	0	2	+ .85
5B.....	23	15	+ .19	5	4	— .33	6	3	+ .26	0	0	+ .70
5A.....	25	18	+ .10	4	5	+ .28	5	3	+ .41	1	1	+ .20
4B.....	16	24	+ .09	4	6	— .38	7	8	+ .48	0	1	+ .10
4A.....	21	16	+ .27	3	7	— .02	7	2	+ .34	0	2	+ .35
Total.....	185	156	+ .12	46	67	— .07	68	45	+ .29	5	15	— .46
												+ .97

OFTEN

RARELY

NO.

GRADE	ATTEMPTS			RIGHTS			ATTEMPTS			RIGHTS		
	No. of classes Above Av.	No. of classes Below Av.	Meas.	No. of classes Above Av.	No. of classes Below Av.	Meas.	No. of classes Above Av.	No. of classes Below Av.	Meas.	No. of classes Above Av.	No. of classes Below Av.	Meas.
SB.....	11	8	+ .06	3	0	+ .20	0	3	— 1.03	5	2	+ .35
8A.....	16	14	— 1.06	1	2	— .40	0	3	— 1.30	5	3	— .25
7B.....	12	8	— .04	1	1	— 1.20	0	2	— .95	4	4	+ .60
7A.....	12	10	+ .70	1	2	— .86	1	2	— .63	6	6	+ .20
6B.....	17	16	+ .38	1	3	— .42	0	4	— .67	4	3	+ .60
6A.....	12	12	— .01	1	0	— 1.50	0	3	— 1.90	4	2	+ .92
5B.....	17	16	— .05	0	3	— 1.00	1	3	— .42	6	4	+ .57
5A.....	17	8	— .72	0	3	— .62	1	4	— .90	2	1	+ .22
4B.....	12	11	— .03	1	3	— .55	2	2	— .02	7	8	+ .84
4A.....	6	15	— .44	0	1	— 1.00	0	1	— .30	5	8	— .29
Total.....	100	124	— .30	9	22	— .73	4	27	— .81	50	28	+ .31
												+ .71

Effect of Special Methods—use of speed tests, straight ahead work, etc. Based upon principal's answer to questionnaire. The table shows for each type of answer the number of classes whose score in Test 7 was higher than the average score of all the classes, and the number whose score was lower. Also a measure of the resultant tendency. (See page 309.) Speed tests, as used in the New York public schools, increase speed, but decrease accuracy.

From the table it may be seen that in general the use of practice tests increases speed but decreases accuracy. For instance, of the 341 classes in which such drills were said to be used daily, 185 classes had scores higher in number of examples attempted (speed) than the average to 156 classes lower than the average; the measure of the resultant tendency being  $+.12$ . In number of examples right, however, the classes are almost equally distributed above and below the average ( $+.167$  to  $-177$ , resultant measure  $-.04$ ). For those schools in which such practice drills are used once a week conditions are exactly reversed. In speed the scores fall below the average (46 to 67, the resultant measure  $-.07$ ) and in accuracy above the average ( $+64$  to  $-45$ ; resultant measure  $+.29$ ). For monthly practice the decrease in speed and increase in accuracy is even more marked. For those classes, however, in which such practice work is not carried out systematically, so that the principals could answer only "Often or Rarely," both speed and accuracy are low, more so in the case of the "Rarely" than of the "Often" group. The one inconsistent tabulation is for the group in which speed practice drills are not used at all. Both in speed and accuracy the scores of these schools are higher than the average, so that if the returns were accepted at their face value the inference would be that practice drills were harmful. These classes, however, were almost entirely from two very good schools in the same section of the city, and the result is thus probably due to some purely local factor. If a direct experiment were arranged in which the number and kinds of classes in each group were selected on the basis of their measures at the beginning of the year such a study would make very plain the exact nature of the effect produced.

The conclusion to be drawn from the present data is that emphasized repeatedly; that too much drill is harmful and that speed and accuracy are two related but antagonistic qualities, to each of which attention must be given. The real problem, as has been said, is a problem of securing proper balance. Not endless practice toward maximum achievement, but efficient drill toward optimum standards—drill adjusted in both quality and quantity to individual needs, and continued only so long as necessary to reach a definite goal. Nor should it be forgotten that standard scores alone both make such efficient control possible, and provide the means for measuring the effects produced.

### Effects of Foreign Parentage

In section V, page 464, of this report, the statement was made that the reason for the inefficiency of the work in the schools as conducted at present is the neglect of the one basic factor in education—the inherent differences in the powers and capacities of individual children. Many illustrations of such differences were given. There are, however, other factors of the same character of which the school is almost equally



neglectful, factors which affect the abilities of whole groups of children and to whose effects too little attention is paid.

A factor of this character is foreign parentage. The child from a home in which no English is spoken, whose practice in reading and speaking the vernacular is limited to the exercises of the classroom, is handicapped at the outset of his school work by such conditions. And when to this is added the poor nutrition, the lack of opportunities for healthful play, and the sordid influences of life in a crowded tenement that is the lot of many children in New York City, it would seem that differences must be produced that would necessitate a special course of study that in time allotments, topics studied, and emphasis would differ from that for children living under more fortunate circumstances. The provision of "unassigned time" seems to the writer a totally inadequate means of meeting the situation, but he has more than once in his visits to the schools been amazed at the splendid results secured in the face of tremendous odds. He has, therefore, attempted to measure roughly the effects of foreign parentage in the few schools in which 80 per cent. or more of the children were markedly of "Jewish," "Italian," etc., parentage. The study, however, takes no account of three important factors—the very much greater effort and time given to the work by the teachers in these schools, the relation of age and rate of promotion to grade, and the attitudes and feelings of the children themselves as expressed in school behavior, truancy, mortality, etc. In addition to these there is a host of minor factors that are not considered. The results, therefore, merely show to what extent the product of these schools differ from the average of all the schools in spite of *all the efforts made to meet the conditions*. The total effects of foreign parentage would probably be many times greater than those shown if more than resultant tendencies could be measured.

For the comparisons, two "Jewish," one "German," two "Italian" and two "American" schools were selected before any inspection of their class averages was made. The principal's characterization of the children as "80 per cent. Italian," "95 per cent. poor, Russian Jews," etc., was accepted as indicating the degree of foreign parentage. Only schools of markedly one type were taken, which accounts for the small number. The two "American" schools were chosen as representing children of most favored conditions as to parentage and home influences, etc., of any examined. The resultant tendencies of the classes in these schools in both abstract work (Test 7) and in reasoning (Test 6) were computed by grades for each type of school following the method indicated elsewhere in this report.<sup>1</sup> The resulting data are given in Table XLII.

The table shows some unexpected results. The American children, chosen as representing the most favored type, do not stand high in either speed or accuracy in the abstract work. Although of the 56 classes 30

<sup>1</sup> See page 509.

Table XLII—Effects of Foreign Parentage

## Part A.—Resultant Tendencies in Abstract Work, Test 7

GRADE	AMERICAN						ITALIAN						GERMAN						JEWISH					
	Attempts			Rights			Attempts			Rights			Attempts			Rights			Attempts			Rights		
	No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.	
		+	—		+	—		+	—		+	—		+	—		+	—		+	—		+	—
4A.....	3	.30		2	5	.18	2	1	1	2	.60		1	1	.15	1	1	1	4	.35		0	5	.18
4B.....	4	.30		3	2	.82	3	2	1	4	.20		1	1	.80	1	1	1	4	2.50		0	3	1.58
5A.....	2	.42	+	4	1	.07	4	2	2	3	.42	+	0	2	—	0	2	2	4	—	—	0	3	1.47
5B.....	5	1.02	+	3	3	.32	3	2	2	3	.58	+	0	2	—	0	1	1	3	.35	+	2	4	.30
6A.....	5	1.06	+	3	2	.15	3	0	6	4	.65	+	1	1	—	1	1	1	2	.85	+	3	4	.23
6B.....	4	.10	—	1	5	.71	3	2	3	3	.54	—	1	1	—	2	0	1	4	.90	+	2	4	.35
7A.....	2	.98	—	3	2	.24	0	2	2	1	.75	—	0	2	—	1	1	1	4	.30	+	0	3	.18
7B.....	2	.46	—	1	4	.28	1	3	1	3	.70	—	2	0	—	1	0	0	3	.60	+	3	3	.58
8A.....	1	.65	—	1	3	1.05	2	1	1	2	.10	—	0	1	—	2	1	0	4	.08	+	1	6	.18
8B.....	2	.42	—	1	3	.97	2	1	1	0	.27	—	0	2	—	2	0	2	5	.15	+	2	4	.27
Totals .....	30	.13	—	20	36	.43	20	21	—	20	.38	—	13	11	—	48	8	8	26	.36	+	26	17	.53

Table XLII (Cont'd)—Resultant Tendencies in Reasoning, Test 6

GRADE	AMERICAN						ITALIAN						GERMAN						JEWISH					
	Attempts			Rights			Attempts			Rights			Attempts			Rights			Attempts			Rights		
	No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.	
		+	—		+	—		+	—		+	—		+	—		+	—		+	—		+	—
4A.....	6	1	.68	3	.04	3	0	3	—1.00	1	.13	1	1	.15	—	1	.25	—	4	.62	1	.47	—	.35
4B.....	6	1	.70	4	.10	3	2	2	—	4	.08	2	0	—	2	.25	—	3	—	3	.35	1	.60	—
5A.....	4	3	.61	5	.37	3	3	3	—	1	.30	2	0	—	2	.05	—	3	—	3	.30	1	.60	—
5B.....	4	2	.62	4	.04	2	2	2	—	0	.62	2	0	—	2	.10	—	3	—	3	.30	0	.45	—
6A.....	4	2	.73	4	.31	4	4	4	—	2	.31	0	2	—	2	.45	—	4	—	4	.25	4	.45	—
6B.....	5	1	.23	3	.08	2	3	2	—	0	.70	0	2	—	.75	—	1	.15	—	2	.03	3	.11	—
7A.....	3	2	.04	3	.18	2	0	2	—	5	.80	0	2	—	.20	—	0	.60	—	4	.85	1	.44	—
7B.....	5	0	.40	5	.66	0	3	3	—	4	.62	0	2	—	.35	—	2	.45	—	5	.88	2	.68	—
8A.....	2	2	.25	3	.67	1	1	3	—	0	.76	1	0	—	.50	—	1	.01	—	5	.01	2	.50	—
8B.....	4	0	.67	3	.65	1	2	2	—	0	.63	2	0	—	.17	—	0	.80	—	6	.33	3	.13	—
Totals.....	41	15	+	35	21	+	19	22	—	20	—	.45	9	10	—	.13	—	.34	23	34	—	18	39	—

## Part C. Summary of Totals

TYPE	Test 7						Test 6					
	Attempts			Rights			Attempts			Rights		
	No.	R. M.		No.	R. M.		No.	R. M.		No.	R. M.	
		+	—		+	—		+	—		+	—
American.....	30	15	.26	20	.13	.43	41	.19	.38	15	.49	.29
Italian.....	20	11	.21	13	.20	.38	19	.22	.22	22	.33	.43
German.....	6	3	.13	11	.48	.36	10	.36	.10	9	.13	.34
Jewish.....	26	16	.29	17	.23	.53	23	.23	.24	34	.24	.35

R. M. means measure of resultant tendency. + means above average. — means below average.

have scores above the average in speed, the resultant measure is — .13, and if it were not for the two exceptional values in the 5B and 6A grades the negative value would be nearly three times as large. In accuracy 36 of the classes fall below the average and the results are consistently negative. The other schools show results of closely the same quality and value. So that while children of foreign parentage do poorly in the abstract work, their results are no worse than those of the American children, showing that the language question may not affect this type of work. It is interesting to note in passing that the German children bear out the reputation of the fatherland, being slow in speed (13 classes below the average to 6 above; resultant measure — .56) and high in accuracy (11 classes above to 6 below; resultant measure + .36).

In reasoning, however, the situation is quite different. Here the basic difficulty of the language problem allows the Americans to excel both in speed (42 classes above the average to 15 below; resultant measure + .50), and in accuracy (35 classes above to 21 below; resultant measure + .39). The children of foreign parents are consistently below both in speed (67 classes below to 47 above; resultant measure — .18) and in accuracy (81 below to 34 above; resultant measure — .39). Foreign parentage is thus a handicap sufficient to lower the scores of all the classes in all the grades. Of an example (+ .50 — — .18) and (+ .39 — — .39). As the average yearly progress in this test is but .6 of an example, it will be seen that the handicap is about equal to that of teaching a class of American children the subjects a year in advance of their real grade. And it must not be forgotten that this result represents merely how far short the provisions made by the school authorities, and the strenuous efforts of the teachers, come of meeting the difficulty. It is in no way a measure of the whole effect. As a whole, therefore, the results show that this problem, too, is one that needs careful investigation. It seems probable that a very simple practical course of study in Arithmetic, based directly and solely upon the social needs of the children, would influence for good a greater number of both teachers and children than any other change that could be as easily made.

### Relation Between Abilities

An entirely different type of product results from the tabulation of the individual scores to determine the relation between two given abilities. Several studies of this sort have been reported above in the discussion of standard scores.<sup>1</sup> Such determinations of relationships between abilities often furnish knowledge that aids in attaining the proper balance in the course of study and may, therefore, be of much importance.

Test 5, rate of motor activity, is a test that seems to have little bearing on school work, yet quickness of motion and thought, particularly

<sup>1</sup> See page 473.

when associated with accuracy, is highly prized in the ordinary activities of life. The relation of the ability measured in this test to certain of the other abilities measured will be discussed.

The general method followed has been indicated above. The individual scores were sorted into groups on the basis of one test; then each group redistributed on the basis of their scores in the other test. In previous tables the entire distributions were given. In the present section only the average score of each group in the second test will appear in the table. The results should in every case be interpreted with the wide range of individual variation in mind.

### Speed in Test 5 and Knowledge of the Tables

The first relation to be discussed is that of speed to ability to write answers to the combinations. The data are given in Table XLIII and the relation shown graphically in Fig. XLIII. A given score in one test is, on the average, associated with a corresponding score in the other; that is, the habit of moving the fingers rapidly is one of the factors determining a person's score in the speed tests. A low score, therefore, may not mean lack of knowledge of the combinations.

The initial decline in the curve is difficult to explain. The actual scores shown in the table are inconsistent. A total score of 121 in the four speed tests means an average score of forty in each. That 116

**Table XLIII—Relation Between (1) Speed in Copying Figures (Test 5) and (2) Ability to Write Answers to the Fundamental Combinations (Tests 1-4)**

Boys			Girls		
Score in Test 5	Number Making Score	Average in Tests 1-4	Score in Test 5	Number Making Score	Average in Tests 1-4
Over 155	98	236	Over 155	167	227
155	37	233	155	49	234
145	113	236	145	137	231
135	246	227	135	291	221
125	979	206	125	1,158	205
115	1,138	191	115	1,270	190
105	2,175	176	105	2,388	177
95	2,460	160	95	2,431	161
85	3,013	149	85	2,664	143
75	1,484	125	75	1,277	129
65	965	117	65	825	119
55	474	108	55	391	120
45	265	114	45	276	128
35	66	121	35	85	138
25	56	121	25	76	137
15	60	141	15	57	140

Total Score,  
Tests 1-4.

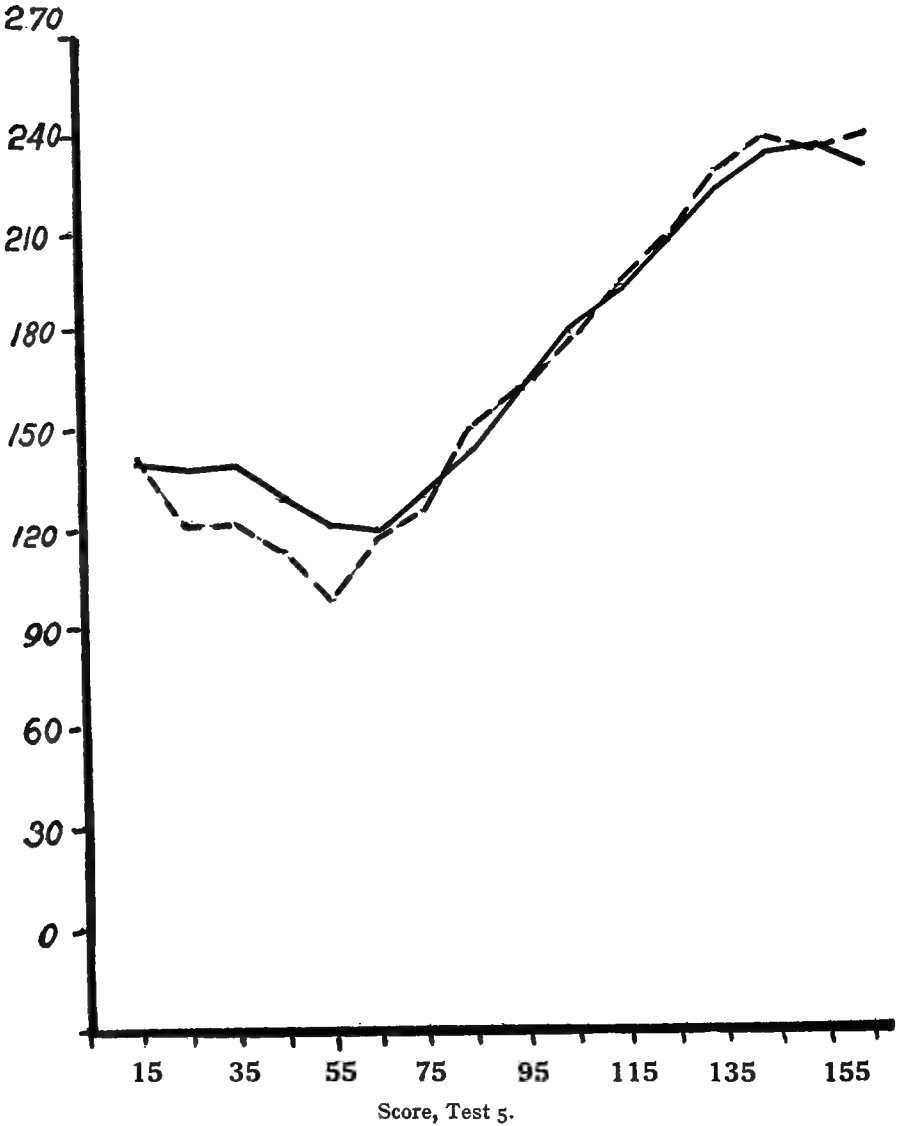


Fig. XLIII

Relation between speed in copying figures and ability to write answers in speed tests 1-4. The abilities are closely related and equally so for boys and girls. For explanation of the irregularities at the lower end of curve, see text. Solid line, boys; dotted line, girls.

Table XLIV—Relation Between Speed in Copying Figures (Test 5) and Ability to Work Abstract Examples (Test 7, Attempts and Rights)

Boys				Girls				Boys				Girls			
Score in Test 5	Number Making Score	Average in Test 7 Attempts	Score in Test 5	Number Making Score	Average in Test 7 Attempts	Score in Test 5	Number Making Score	Score in Test 5	Number Making Score	Average in Test 7 Rights	Score in Test 5	Number Making Score	Score in Test 5	Number Making Score	Average in Test 7 Rights
Over 155	98	14.5	Over 155	167	14.7	Over 155	98	Over 155	167	7.7	Over 155	167	Over 155	167	5.0
155	37	14.9	155	49	14.9	155	37	155	49	8.2	155	49	155	49	7.7
145	113	15.2	145	137	15.9	145	113	145	137	8.8	145	137	145	137	8.8
135	246	15.8	135	291	15.9	135	246	135	291	9.0	135	291	135	291	9.0
125	979	14.8	125	1,158	15.1	125	979	125	1,158	8.4	125	1,158	125	1,158	9.0
115	1,138	14.6	115	1,270	14.6	115	1,138	115	1,270	8.3	115	1,270	115	1,270	8.6
105	2,175	13.6	105	2,388	13.8	105	2,175	105	2,388	7.6	105	2,388	105	2,388	8.3
95	2,460	12.6	95	2,431	12.7	95	2,460	95	2,431	7.1	95	2,431	95	2,431	7.7
85	3,013	11.2	85	2,664	11.3	85	3,013	85	2,664	6.2	85	2,664	85	2,664	6.8
75	1,484	10.1	75	1,277	10.4	75	1,484	75	1,277	5.7	75	1,277	75	1,277	6.3
65	965	9.3	65	825	9.5	65	965	65	825	5.3	65	825	65	825	5.5
55	474	8.8	55	391	9.3	55	474	55	391	5.2	55	391	55	391	5.3
45	265	8.2	45	276	9.5	45	265	45	276	4.4	45	276	45	276	5.8
35	66	9.7	35	85	10.4	35	66	35	85	5.2	35	85	35	85	6.0
25	56	10.2	25	76	10.6	25	56	25	76	5.4	25	76	25	76	6.3
15	60	11.2	15	57	10.9	15	60	15	57	6.4	15	57	15	57	5.3

(56 plus 60) children should be able to write forty answers per minute in a speed test, but able to copy less than thirty figures per minute in Test 5, is contradictory. A partial explanation is that Test 5 is the first one given, and some children interpret the instruction to mean that they are to draw their figures with painstaking care. It was not possible to make the analysis necessary to determine whether this accounts for all of the effect or not.

#### Speed in Test 5 and Abstract Work

The relation of speed to ability in Test 7 is shown in Table XLIV and Fig. XLIV. The inference is that speed in writing figures as such speed is developed in the New York schools is a factor in determining the number of examples attempted, and, to a much less extent, the number worked correctly. It seems probable that both ac-

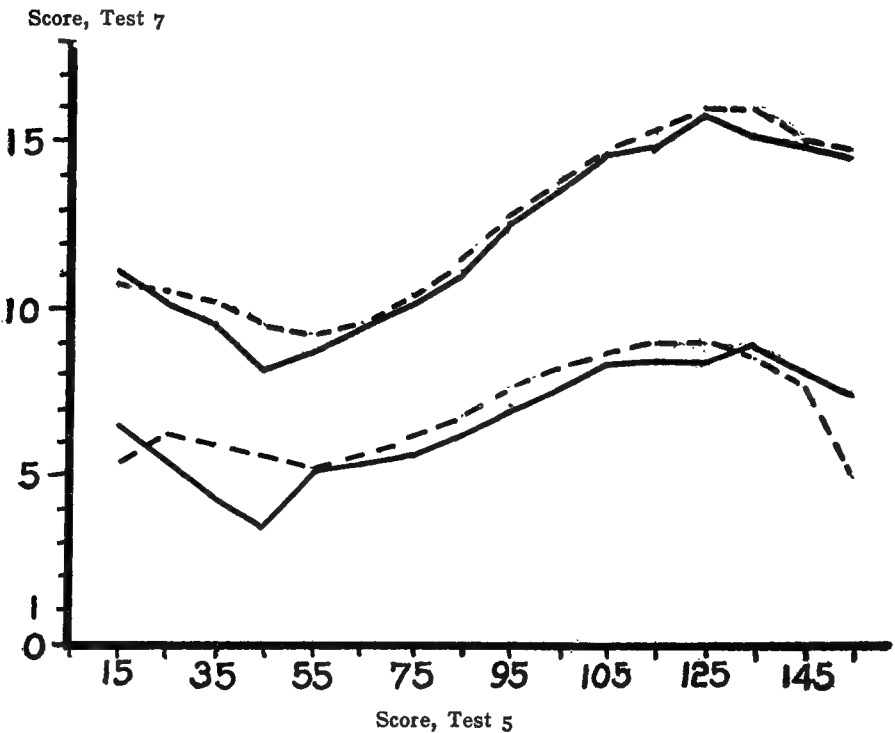


Fig. XLIV

Relation between speed in copying figures and speed and accuracy in abstract work (Test 7). Solid line, boys; dotted line, girls; upper line, attempts, Test 7; lower line, right. For both, speed in copying figures is a large factor in the number of examples attempted, but a much smaller factor in the number of examples right.



curacy and speed need specific attention in the schools. Of the two, accuracy, it would seem, should be put before speed; that is to say, a child able to work accurately would, upon taking a business position, gain speed from the daily practice that is inherent in all commercial work. On the other hand, the really vital thing is to adopt the method most nearly in accord with the child's natural development, and it may be more efficient to develop speed before accuracy. The results from this investigation do not throw light upon the question except to indicate that speed, as one of many factors, has slight influence in determining the score made in examples right.

### Speed in Test 5 and Simple Reasoning

The question of speed in copying figures was also studied in relation to speed in simple reasoning. Table XLV and Fig. XLV show the relation between the scores made by the boys and girls in Tests 5 and 6. The connection between the two abilities is evidently closer than in the preceding case. In general those who can copy figures rapidly are able to read and decide the simple problem with a corresponding degree of rapidity. That is, speed in mental activities is probably conditioned by the inherent organization of the individual to the same degree that speed in muscular activity is. The importance, therefore, of the school's super-

**Table XLV—Relation Between Speed in Copying Figures (Test 5) and Ability in Simple Reasoning (Test 6, Attempts)**

Boys			Girls		
Score in Test 5	Number Making Score	Av. Score in Test 6 Attempts	Score in Test 5	Number Making Score	Av. Score in Test 6 Attempts
Over 155	98	6.6	Over 155	167	6.5
155	37	6.0	155	49	6.6
145	113	6.6	145	137	6.8
135	246	6.6	135	291	6.4
125	979	6.0	125	1,158	6.1
115	1,138	5.9	115	1,270	5.6
105	2,175	5.5	105	2,388	5.3
95	2,460	5.0	95	2,431	4.8
85	3,013	5.1	85	2,664	4.4
75	1,484	4.1	75	1,277	3.9
65	965	3.7	65	825	3.7
55	474	3.5	55	391	3.6
45	265	2.9	45	276	3.5
35	66	3.6	35	85	3.9
25	56	4.0	25	76	4.0
15	60	3.7	15	57	4.2

vision of the habits of work, formed in the early grades, should be obvious.

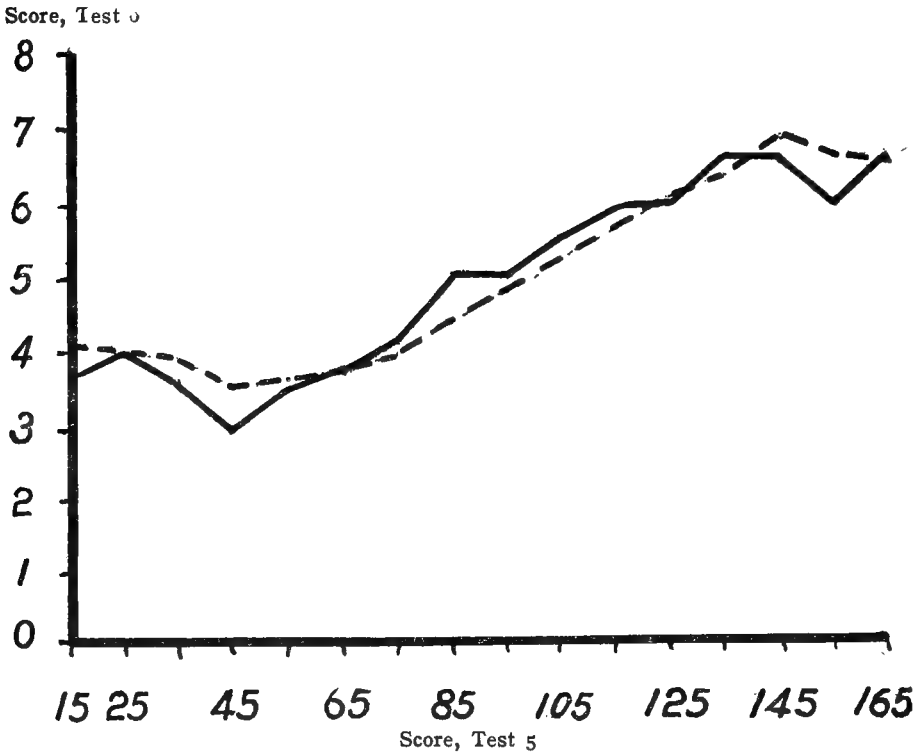


Fig. XLV

Relation between speed in copying figures and speed in simple reasoning. Solid line, boys; dotted line, girls. For both, the two abilities are closely related.

### Sex Differences

The differences in the resultant tendencies of boys' and girls' class, discussed above, together with the slightly higher averages of girls over boys, lead naturally to the consideration of the attention that should be paid to sex differences in planning the course of study. The superiority of girls over boys, as shown by special tests, differences in rates of promotion, etc., has been noticed by many investigators and the inference is sometimes drawn that school work is better adapted to girls than to boys. All such discussions are based upon the use of averages which seem to the writer to hide the real facts of the case. Differences between the abilities of boys and girls there undoubtedly are, but whether due to sex or to environmental influences the differences are too slight to be

of any significance *so far as present knowledge goes*. For example, in Table XLVI is given for the 7B grade by boys and girls the grade averages, and the distribution of the individual scores in Tests 3 and 6, which represent the extremes in the amount of difference observed. The curves of the grade averages in Fig. XLVI will make the relation between the two types of scores plain.

It will be noted that in Test 3 the range of boys is 100 units of the scale; for girls, 110 units; that the superiority of the girls' average over the boys is but 2.8 units. Forty-seven per cent. of the girls and 38 per cent. of the boys exceed the average score made by the girls, while 39 per cent. of the girls and 50 per cent. of the boys have scores below the average score of the boys. In reasoning the differences are greater. The range of the boys' score is sixteen examples; of the girls', twelve; the difference between the averages of the two groups, .6 of one example. Forty-six per cent. of the boys and 30 per cent. of the girls exceed the average score made by the boys, while 40 per cent. of the boys and 55 per cent. of the girls fall below the average score of the girls. These facts are shown graphically in Fig. XLVII.

Table XLVI—Sex Differences in Average Scores and in Distributions by Grades

GRADES	GRADE AVERAGES					
	Test 3		Test 6			
			Attempts		Rights	
	Boys	Girls	Boys	Girls	Boys	Girls
4A	25.9	27.7	3.2	3.4	1.6	1.6
4B	29.6	31.6	3.7	3.7	2.0	1.9
5A	32.7	34.4	4.2	4.1	2.2	2.1
5B	35.4	37.2	4.6	4.7	2.7	2.4
6A	37.3	39.6	5.1	4.8	3.1	2.7
6B	36.5	40.0	5.1	5.3	3.4	3.0
7A	38.9	41.9	5.1	5.4	3.6	3.3
7B	40.1	42.9	5.7	5.6	4.2	3.6
8A	43.9	45.9	6.0	5.8	4.5	3.9
8B	45.6	47.6	6.3	6.0	5.0	4.4
9A	42.7	47.1	6.4	5.9	5.0	4.8
9B	45.4	49.4	5.8	6.0	5.0	5.0
10A	43.5	47.2	5.6	6.1	4.9	5.2
10B	45.8	48.5	5.6	5.9	4.9	4.8
11A	45.7	46.3	6.1	5.8	5.7	4.5
11B	50.4	51.6	5.5	6.4	4.6	4.8
12A	46.1	47.6	6.5	6.6	5.3	5.3
12B	49.2	44.9	6.7	6.6	5.8	5.6
....	....	....	....	....	....	....
....	....	....	....	....	....	....
....	....	....	....	....	....	....

Table XLVI (continued)

TEST 3			TEST 6				
Score	7B Grade		Score	Attempts		Rights	
	No. Making Score			No. Making Score		No. Making Score	
	Boys	Girls		Boys	Girls	Boys	Girls
125	.....	2	16	1	6	1	.....
115	.....	.....	15	.....	.....	.....	.....
105	1	3	14	1	.....	.....	.....
95	.....	3	13	4	3	.....	.....
85	5	12	12	7	6	1	1
75	14	12	11	7	11	.....	2
65	76	82	10	15	18	6	4
55	130	176	9	34	21	10	4
45	401	431	8	59	52	23	11
35	452	363	7	119	88	50	24
25	144	78	6	240	216	110	61
15	11	6	5	287	273	197	132
5	1	.....	4	238	230	245	197
...	.....	.....	3	161	172	245	236
...	.....	.....	2	55	65	201	273
...	.....	.....	1	6	6	113	175
...	.....	.....	0	1	1	33	48
Total No...	1,235	1,168	...	1,235	1,168	1,235	1,168
Average Score....	40.1	42.9	...	5.7	5.6	4.2	3.6

In view of the extent to which the sex groups overlap, the fact of a small difference in the average scores of the groups need not be considered in planning the course of study. At the same time the fact that such differences exist is proof that there are forces at work of which school men are ignorant.

#### Efficiency of Present System of Grading

The whole question of relative ability and grading is an important one for which the present machinery of promotion is utterly inadequate. No better proof of the inability of the school without objective measurement to grapple successfully with its problems is needed than is found in the fact that if children were graded mechanically on an age basis alone—all children of from ten to eleven years of age being put in the fourth grade, those eleven years old in the fifth grade, and so on—the grades would be neither more nor less variable than they are at present in respect to the fundamental abilities of arithmetic. The data upon which this statement is based will be found in Table XLVII. The distributions of the scores of 5A boys and girls in Test 1, addition, are given; also the distributions on an age basis. The average of each group is also given.

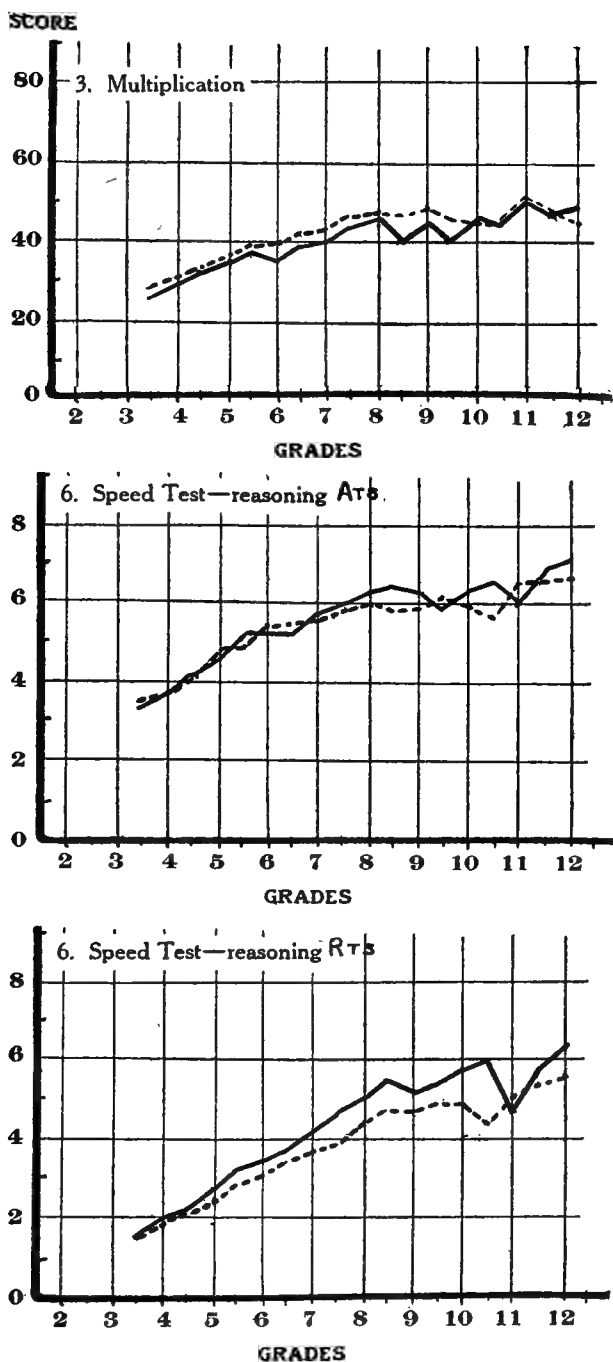


Fig. XLVI

Comparison of achievements of boys and girls in Speed Test 3, Multiplication, and Test 6, Speed Reasoning; attempts and rights. Solid line, boys; dotted line, girls. The girls exceed the boys in multiplication and fall below them in accuracy of work in reasoning. These tests were chosen as representing the extreme differences in the achievements of the sexes. The amount of the differences are insignificant. See Fig. XLVIII.

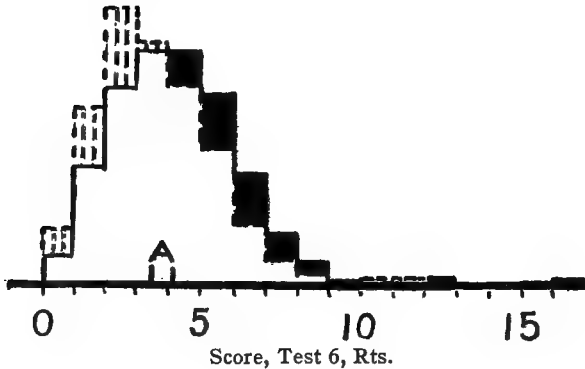


Fig. XLVII

Superiority of 7B boys over 7B girls in examples right, Test 6, based on a distribution of 1,200 individual scores of each sex. The difference between the two marks A is the difference between the average scores of the two groups. The part in black represents the boys higher than the girls; the shaded portion, the girls that fall below the boys. The part in white is common to both sexes.

A measure of the variability of a group is the average difference of the individual scores from the average score of the group. The average deviations in the table have been found by the usual approximate methods.<sup>1</sup> For purposes of comparing the variability of different groups, the per cent. each average deviation is of its own average will be used as a coefficient of variability. Thus, in Table XLVII the average deviation of the boys is 9.4, and the girls 9.9. But the average of the girls' score is also larger, 49.1 to 47.6. The larger average deviation may not indicate a larger variability, as the average has made a corresponding change. In fact, 9.4 is 20 per cent. of 47.6, its average, just as 9.9 is 20 per cent. of its average, 49.1. The two variabilities are, therefore, the same, although the average deviations differ.

In Table XLVII are also given for all the grades and corresponding ages and for boys and girls the coefficients of variability of the scores in Tests 3 and 7. It will be seen that the figures are remarkably constant and fully support the statements above.

#### Defects of Course of Study by Analysis of Mistakes

A statistical investigation of educational products can be made to yield data bearing upon other school problems of general importance. It often happens that the practical workings of a course of study in arithmetic and the theoretical considerations upon which it was based are widely different. By analysis and tabulation of the different types of mistakes made, it is possible to lay bare the actual defects of any given course.

<sup>1</sup> Mental and Social Measurements, E. L. Thorndike, p. 75.

Table XLVII

Distribution by age and grade to show variabilities. Also variability of Tests 3 and 7 by grades and ages. The variabilities given at the bottom of the first part of the table show that mechanical grading on an age basis would not produce more variable groups than now exist in the grades. Confirmed for two tests and all grades in the second part of the table. For explanation of the measure of variability used, see text.

TEST 1					VARIABILITIES						
Score	No. Making Score 5A		No. Making Score 11.5 Yrs. Old			Boys			Girls		
	Boys	Girls	Boys	Girls		4A	4B	Years 10.5	4A	4B	Years 10.5
125	2	2	2	1	Test 3 { Test 7 { Atts. Rts.	27%	27%	27%	25%	27%	26%
115	....	1	1	1		34	24	24	28	22	26
105	....	3	1	14		55	47	47	43	44	45
95	3	5	8	15	Test 3 { Test 7 { Atts. Rts.	5A	5B	Years 11.5	5A	5B	Years 11.5
85	15	22	53	101		24%	24%	24%	25%	24%	25%
75	43	47	120	166		26	21	22	22	23	23
65	197	216	420	429		45	40	46	42	36	43
55	317	378	599	579	Test 3 { Test 7 { Atts. Rts.	6A	6B	Years 12.5	6A	6B	Years 12.5
45	498	475	681	632		23%	23%	22%	25%	24%	25%
35	237	223	327	239		22	20	21	21	18	22
25	46	31	81	47		39	40	42	36	36	39
15	4	....	5	2	Test 3 { Test 7 { Atts. Rts.	7A	7B	Years 13.5	7A	7B	Years 13.5
5	1	....	1	1		23%	23%	26%	22%	20%	22%
....	....	....	....	....	Test 3 { Test 7 { Atts. Rts.	20	18	21	18	17	21
....	....	....	....	....		32	31	40	29	31	34
....	....	....	....	....	Test 3 { Test 7 { Atts. Rts.	8A	8B	Years 14.5	8A	8B	Years 14.5
....	....	....	....	....		21%	20%	23%	19%	19%	21%
Totals.....	1,363	1,403	2,294	2,227		18	15	20	16	15	19
Average.....	47.6	49.1	50.1	53.3		32	26	38	30	27	37
Av. Dev. ....	9.4	9.9	11.2	11.1	Test 3 { Test 7 { Atts. Rts.						
Var. ....	20%	20%	22%	21%							

Table XLVIII—Analysis of Mistakes, Test 7

Grades	Number of Papers Scored	Total Number of Examples Attempted	Total Number of Errors Made	MISTAKES DUE TO CARELESSNESS		MISTAKES DUE TO COPYING		MISTAKES IN USE OF COMBINATIONS	
				No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
4A	95	875	435	52	12%	53	12%	213	49%
4B	67	398	273	45	16	21	8	160	58
5A	75	730	312	39	13	24	8	201	64
5B	62	626	308	27	9	26	8	107	35
6A	89	1,083	430	48	11	40	9	220	51
6B	98	1,111	379	50	13	44	12	176	46
7A	67	890	290	39	13	36	12	153	53
7B	57	723	216	36	17	21	10	104	48
8A	104	1,545	404	49	12	16	4	206	50
8B	57	872	160	19	12	19	12	80	50

## Abstract Work

In Table XLVIII such a tabulation of the mistakes made in the papers in Test 7 from two schools is presented. The types of mistakes given are those of carelessness (bringing down the wrong figure in division, placing a partial product under the wrong figure in multiplication, etc.); those of copying (writing 678 as 687); and those due to a mistake in the fundamental combinations. An inspection of the table will show that conditions do not improve from grade to grade; that, in Test 7, half of the mistakes are due to lack of complete mastery of the tables, one-eighth of the mistakes to carelessness, and one-twelfth to copying; the rest are scattered. Systematic training in rapid checking of work done would do much to eliminate carelessness in copying; the remedy for lack of knowledge of the tables has been discussed before.

Mistakes due to carrying are another important type of mistake. The measure of the effect of carrying is possible since the first four examples involve no carrying, while the second four do. Table XLIX gives the facts in regard to the number of children completing both examples of the pairs 1 and 5, 2 and 6, etc., and the number getting each right. The difference in the accuracy (per cent. of examples right) for each example of a pair measures the effect of the carrying.

**Table XLIX—Analysis of Results in Test 7**  
Effect of "Borrowing and Carrying" on Accuracy

	Addition Examples 1 and 5		Subtraction Examples 2 and 6		Multiplication Examples 3 and 7		Division Examples 4 and 8	
No. Attempting Both . . .	731		717		680		447	
No. Right . . . . .	471	492	548	408	459	318	309	163
Accuracy . . . . .	64 $\frac{2}{3}$ %	67%	76 $\frac{2}{3}$ %	57 $\frac{2}{3}$ %	67 $\frac{2}{3}$ %	47%	69%	36%
Difference . . . . .	—3 $\frac{1}{3}$ %		19 $\frac{1}{3}$ %		20 $\frac{1}{3}$ %		33%	

The negative score in addition is partly due to the fact that, in the lower grades, many children did not work the two parts of the first example separately as planned and, therefore, did not get the right answer; the effect of the carrying in addition is slight. The effect is greater and equal for subtraction and multiplication, and greatest in division, where the example with carrying is approximately twice as hard as that of equal length without carrying, judging by the accuracy of work in each case. This suggests that long division is the best medium for practice work to correct this defect, as all the other operations are involved. The effect of carrying is large, decreasing the accuracy nearly



one-half in division, for instance, and one-fourth in subtraction. Why this should be so is not known, but the fact that it is so explains why mere drill on the tables will not of itself necessarily increase accuracy.

### Reasoning Work, Test 6

The reasoning tests offer a fruitful field for such analytical work as, at present, probably no other phase of work in arithmetic is so poorly organized or rests upon such a slight foundation of knowledge. The rapid analysis and solution of simple oral problems which is being advocated at the present time by many educational authorities is closely similar to the work of Test No. 6, Speed Reasoning. Is such work of advantage? Will the ability "transfer" to Test No. 8 the longer two-step reasoning problems?

The answer is given in Table L and Fig. XLVIII, where the relation between scores on the basis of examples right in Test 6 and Test 8 is presented as other relations between abilities have been in previous discussions. It will be seen that the two curves steadily rise except at the extreme end where the cases are too few to be significant. The two abilities, therefore, are directly related, and the ability to solve two-step problems is a function of the ability to decide readily the operation to be used in simple situations. In view of these facts it is probable that a large amount of the various phases of mental arithmetic and rapid work in a simple reasoning would materially strengthen the work in reasoning. Indeed, for some teachers, the test itself furnished the only hint needed, and, in many schools, letters from the principals show that greater emphasis was at once given to this phase of the work.

Table L

Relation Between Accuracy in Speed Reasoning (Test 6, Rts.) and Accuracy in Reasoning (Test 8, Rts.)

Boys			Girls		
Score in Test 8	Number Making Score	Average in Test 6	Score in Test 8	Number Making Score	Average in Test 6
8	.....	.....	8	.....	.....
7	4	5.0	7	5	4.3
6	19	8.3	6	11	4.4
5	56	6.1	5	48	6.3
4	260	6.0	4	170	5.5
3	830	5.0	3	631	5.0
2	2,241	4.3	2	1,802	4.1
1	3,930	3.5	1	3,947	3.4
0	6,289	2.3	0	6,928	1.9

Score, Test 6.

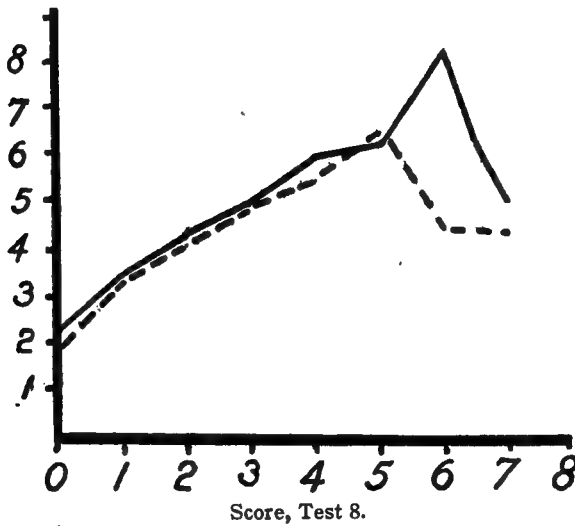


Fig. XLVIII

Relation between ability in speed reasoning and ability to work reasoning problems. (On basis of scores of examples right in Tests 6 and 8.) One ability is directly dependent upon the other.

The analysis of the mistakes in Test 6 furnishes some of the information so badly needed for a proper organization of teaching effort in reasoning. In Table LI are given by grades the results from the analysis of mistakes in the first four examples in 730 papers from two schools. These cover the four operations and the analysis is limited to the four

Table LI—Analysis of Accuracy in Speed Reasoning by Grades and Operation, Test 6

GRADES	EXAMPLE 1 MULTIPLICATION			EXAMPLE 2 ADDITION			EXAMPLE 3 SUBTRACTION			EXAMPLE 4 DIVISION		
	Atts.	Rts.	Per Cent. of Acc.	Atts.	Rts.	Per Cent. of Acc.	Atts.	Rts.	Per Cent. of Acc.	Atts.	Rts.	Per Cent. of Acc.
4A	87	45	52%	85	38	45%	67	13	19%	41	14	34%
4B	67	43	64	64	18	28	51	12	24	29	20	69
5A	75	63	84	62	28	45	56	20	36	36	19	53
5B	45	51	78	58	22	38	57	17	30	43	28	65
6A	88	65	74	37	38	44	85	33	39	73	52	71
6B	65	46	71	65	31	48	63	31	49	50	44	88
7A	67	50	75	66	34	51	63	27	43	57	41	72
7B	57	50	88	57	38	67	57	33	58	56	45	80
8A	102	92	90	101	76	75	102	79	77	92	83	90
8B	57	50	88	57	45	79	56	40	71	51	40	96
Total . . .	730	555	76	702	368	51	657	305	46	528	395	75

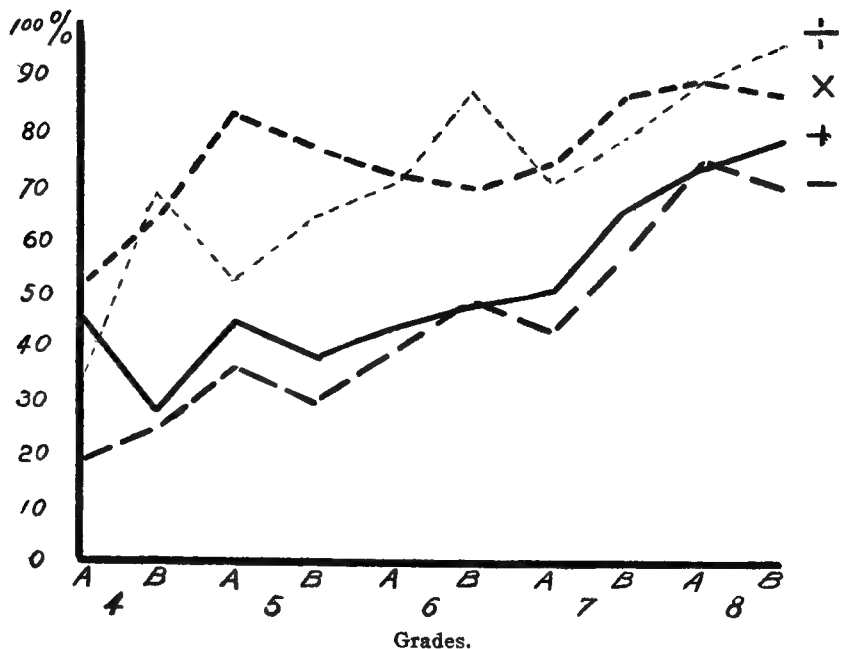


Fig. XLIX

examples because, as will be seen from inspection of the number of examples attempted, not many children below the seventh grade complete the four examples.

The results are shown graphically in Fig. XLIX. It will be noted that, in addition, the curve rises from a low accuracy in the early grades to a final accuracy of 75 per cent. The subtraction curve is closely the same but more irregular. The curve for multiplication rises rapidly to a high value in the 5A grade, steadily declines through the three grades following, then rises rapidly to a maximum. The curve for division follows somewhat the same course. It is probable, however, that the irregularities of these curves are due to the small number of papers examined. The excellence of a good class or teacher could change the averages materially. The only safe inference is that judgments of the operation to be used are more difficult in the addition and subtraction situations in reasoning than in the multiplication and division situations. As the difficulty most often noticed by the teacher is the confusion of multiplication and division situations, this result will be a surprise to many; but it is fully confirmed by an analysis of the different variations possible in addition-subtraction examples as compared with those in the multiplication-division problems.

In this connection a further analysis of mistakes is interesting. In

Table LII—Analysis of Errors in Speed Reasoning, Examples 1-4

Arithmetic—Test No. 6.      Speed Test—Reasoning

- 1. The children of a school gave a sleigh-ride party. There were 9 sleighs used, and each sleigh held 30 children. How many children were there in the party?
- 2. Two school-girls played a number game. The score of the girl that lost was 57 points and she was beaten by 16 points. What was the score of the girl that won?
- 3. A girl counted the automobiles that passed a school. The total was 60 in two hours. If the girl saw 27 pass the first hour how many did she see the second?
- 4. On a playground there were five equal groups of children each playing a different game. If there were 75 children altogether, how many were there in each group?

Operation Substituted

	Total Number of Errors	ADDITION		SUBTRACTION		MULTIPLICATION		DIVISION	
		Number of Cases	Per Cent. of Total Errors	Number of Cases	Per Cent. of Total Errors	Number of Cases	Per Cent. of Total Errors	Number of Cases	Per Cent. of Total Errors
No. 1— Multiplication....	175	57	32	10	6	....	....	108	62
No. 2— Addition.....	334	....	....	179	54	70	21	85	25
No. 3— Subtraction.....	352	85	24	....	....	137	39	130	37
No. 4— Division.....	133	30	23	20	15	83	62	....	....

Table LII are given the first four problems of the test and an analysis of the character of the errors made. It should be noticed that, as the problems are stated, the conventional "cues" are avoided. Each problem presents a situation in detail. Then a question is asked, the answer to which can be made only by those who have grasped the relations existing between the different quantities involved. Thus the question in the first example—How many children were there in the party?—does not indicate in itself in any way the operation to be used; is of the same form as the question used in the sixteenth example, for instance, where the operation to be used is division. So for the other examples. The second example is undoubtedly more difficult than the others because of the presence of the words "lost," "beaten," which are often "cues" for subtraction.

The analysis of mistakes shows that, for multiplication, the first problem, six children out of ten substituted division. This confusion of ideas is familiar to all teachers of arithmetic, and is another indication of the need for a constructive analysis of the whole problem of teaching reasoning in arithmetic. Of the remaining four children, three "guessed" addition and one subtraction.

For addition, problem two, five children out of ten failed to grasp the true situation and responded to the stimuli "lost" and "beaten."

The subtraction problem, number three, was beyond the comprehension of all, probably because of language difficulty. The "guesses" di-

vide almost equally between the other three operations—addition, the reverse, receiving even less than the other two.

In the division problem, for two-thirds of the children confusion with multiplication occurred, as in example one.

Such results, although not final, owing to the small number of examples and papers analyzed, are typical of the confusion that exists in the minds of many children. The idea that this must necessarily be so should not be entertained for a moment. It is caused wholly by vagueness of aim and by ignorance of the true relation between the essential elements of the subject.

### Reasoning Work, Test 8

The results from the other reasoning test, No. 8, are susceptible of the same sort of analysis. The data for accuracy are given for the first two problems separately in Table LIII and in Fig. L. The difference between these two problems lies in the fact that the second contains numbers which have nothing to do with the result desired, so the child is called upon to pick out the quantities that are significant for the question asked. The effect of this need for selection is to decrease the accuracy approximately a constant amount for grades 6, 7, and 8. The relative difficulty of problems involving such selection varies from "many times" to "one and one-half times as hard" in the upper grades.

The development curve of accuracy for the first example seems satisfactory, but a comparison of the average score of the 8B grade in this test with half the average scores in Test 7 (the time allowance in Test 7 was twice that of Test 8) will show that the reasoning problems are more than twice as difficult as measured by the number attempted or completed correctly in a given time. The data are given in Table

**Table LIII—Comparison of Accuracy of Work by Grades in Case of First Two Problems of Test No. 8**

Grades	PROBLEM 1			PROBLEM 2			Difference in per Cent. of Accuracy
	Attempts	Rights	Per Cent. of Accuracy	Attempts	Rights	Per Cent. of Accuracy	
4A	94	5	5	76	0	0	5
4B	66	8	12	48	1	2	10
5A	73	28	38	56	6	11	27
5B	58	15	26	47	6	13	13
6A	87	49	56	64	20	31	25
6B	98	62	63	85	22	26	37
7A	67	41	61	50	14	28	33
7B	53	36	68	42	17	40	28
8A	101	78	77	85	45	53	24
8B	56	48	86	42	24	57	29

Accuracy.

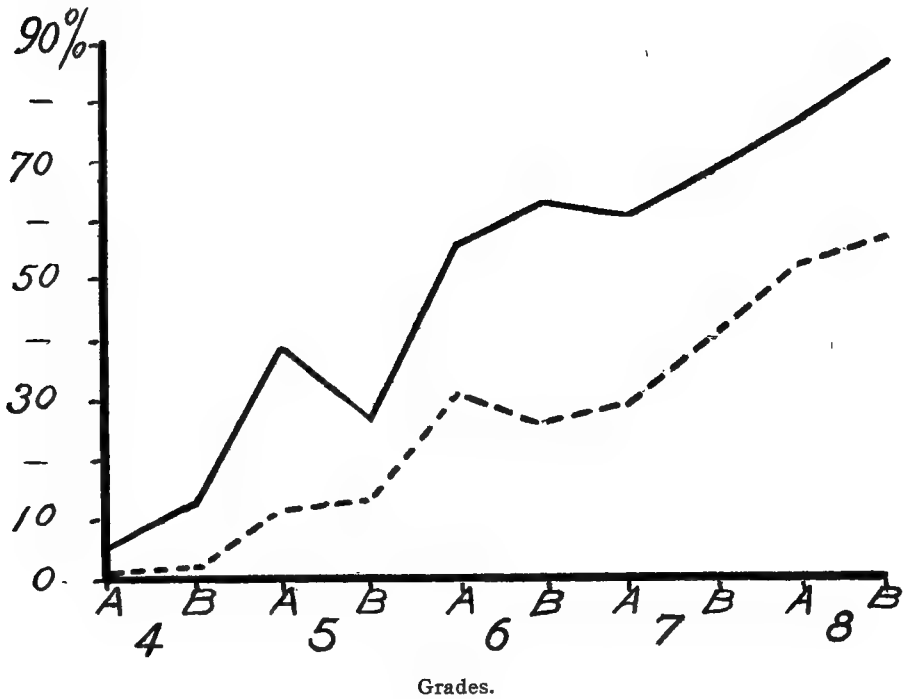


Fig. L

Comparative accuracy of first two problems in Test 8, Reasoning. Solid line, No. 1; dotted line, No. 2. The second problem contains several numbers that have nothing to do with the result desired. The element of selection in the second problem causes (in grades 6—8) a decrease in accuracy of nearly 30 per cent.

LIV. As the actual amount of work to be done in each example of Test 8 is the same as that of Test 7, the decrease in amount of work done is due wholly to the reasoning. The reading involved in reasoning problems is not a large factor in the difference. An able person should work at the same rate in the two tests and the ratio based upon the Standard Scores is 1.4. That is, the relation of the reasoning work to the abstract work in the New York schools, as measured by these tests, is but 61 per cent. of the relation called for in the Standard Scores.

An analysis of the mistakes made in Test 8 yields important information. In Table LV are given the data from a comparative analysis of mistakes in Examples 1 and 2. For Example 1 the results for four types of mistakes are given. T means that it was impossible to tell what the child was trying to do, that the example was totally wrong; F indicates a mistake in the computations; S, a mistake of substituting one operation for another, and M, carelessness. For Example 2, L is added

Table LIV—Comparison of 8B Grade Averages in Tests 7 and 8

	ATTEMPTS		RIGHTS	
	Boys	Girls	Boys	Girls
Test 7, 12 minutes.....	15.9	16.3	10.5	11.1
6 minutes (computed)...	7.9	8.1	5.2	5.5
Test 8, 6 minutes.....	3.8	3.4	2.4	2.1
Ratio.....	2.1	2.4	2.2	2.6
Standard Ratio.....	1.5		1.3	

for mistakes in which the child has used all the numbers in the problem, or has selected the wrong numbers.

The results show that some progress in reasoning is made. The number of mistakes that cannot be analyzed decreases rapidly and tends to disappear. The same is true of mistakes due to use of the wrong operation. On the other hand, the mistakes in work are fairly constant, although on a per cent. basis the relative number increases. It must

Table LV—Analysis of Mistakes in Test 8, Reasoning

## EXAMPLE 1

GRADES	ATTEMPTS	TOTAL ERRORS MADE		T TOTALLY MISUNDERSTOOD		F MISTAKES IN COMPUTATION		S MISTAKES IN SUBSTITUTION		M MISTAKES IN CARELESSNESS		L MISTAKES IN SELECTION	
		Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
4A	94	89	95	57	64	10	11	8	9	3	3	..	....
4B	66	66	100	14	21	13	20	29	44	2	3	..	....
5A	73	47	64	10	21	11	23	19	40	0	0	..	....
5B	58	48	82	5	10	20	42	13	27	4	8	..	....
6A	87	38	44	8	21	13	34	9	24	1	3	..	....
6B	98	39	40	4	10	25	64	4	10	2	5	..	....
7A	67	28	42	5	18	11	39	3	11	4	14	..	....
7B	53	16	30	2	12	11	69	1	6	1	6	..	....
8A	101	23	23	6	26	14	61	0	0	0	0	..	....
8B	56	10	18	1	10	7	70	1	10	1	10	..	....

## EXAMPLE 2

4A	76	77	101	71	92	0	0	1	1	0	0	3	4
4B	48	51	106	27	53	3	6	2	4	1	2	15	31
5A	56	53	95	27	51	1	2	3	6	0	0	21	40
5B	47	47	100	15	32	5	11	9	19	1	2	16	34
6A	64	46	72	22	48	4	9	3	7	2	4	14	30
6B	85	69	81	22	32	12	17	8	12	1	1	24	35
7A	50	40	80	11	27	5	12	7	17	2	5	14	35
7B	42	28	66	9	32	5	18	2	7	2	7	9	32
8A	85	45	53	13	29	11	24	4	9	3	7	13	29
8B	42	24	57	2	8	3	12	5	21	1	4	12	50

not be supposed, however, that the accuracy is low in this work, for, on the basis of computations alone, the accuracy of work is higher than in Test 7. The reason for this is probably (1) the greater time and care given to the thorough understanding of the examples, and (2) the slower rate at which the examples were worked.

In the results from example number 2, the decrease in the per cent. of mistakes that could not be analyzed is accompanied by an inverse change in the number of mistakes in selection; that is, the children do not succeed in getting the problem right, although the change represents a step in advance. The ability to make the selective judgment called for in the example seems to the writer an important one; the perception of relation and the selection of material related to a given purpose are so much higher forms of mental activity than mere response to stimulus. Judged by the number of mistakes made, little increase in ability of this sort is made in these schools. It should be evident, therefore, that very many problems worthy of study are to be found in the reasoning work.

### Value of Life Histories

As the final illustration of this section, Fig. LI is presented—the graph of the records of three individuals of the same class measured repeatedly with the same test (Test 3, multiplication) and under the same conditions through three school years. The importance of such “life histories” in making plain the play of the hidden forces that are constantly modifying the results of effort on the part of individuals can hardly be overestimated. To one who knows the children, and the conditions under which they worked, the curves in the figures are full of meaning. If the lives of even a small number of children could be closely studied, from the earliest school years through to maturity, the gain in scientific knowledge of the factors making for individual efficiency would be very great.

In the figure, A, B, and C are the curves of three girls of very different types. A is a healthy, vigorous girl, as strong mentally as physically, a natural leader, whether in intellectual work, in play, or in mischief. Her school marks are usually high. B is less vigorous physically, but more conscientious, a good student, but not brilliant, passive and amiable, but not aggressive. C in health, vigor, and possibilities seems the equal of A, but in her lack of responsiveness to school conditions and to her teacher's efforts, in her laziness, her general smartness and industry in inventing excuses and methods of avoiding assigned tasks, in her ideals generally, she is quite the opposite of the other two.

In September, 1909, when the record begins, the relative abilities of two of these girls, B and C, were nearly the same—both being at the bottom of the class, which, at this time, ranked as sixth grade. B had been ill and out of school part of the year before. During November and December, for nearly six weeks, the class devoted a drill period of five minutes a day to work on the multiplication tables. Sometimes the work



was oral, sometimes written, sometimes visual. The class average at this time rose until the score in multiplication was higher than for any other operation, as may be seen by following the dotted line in the smaller figure.

A responded readily to the drill, B slightly. C was absent on the days the tests were given, both before and after the Christmas vacation. As no further drills were given in multiplication during the year, A lost during the next term, gained slightly the last of the year, and lost heavily during the long summer vacation. B, on the other hand, gained during the second term, and held the level reached, so that at the opening of school, September, 1910, A's score showed a small net gain, B a large gain, and C also a small gain. At this time the tests were changed slightly, and automatic timing introduced to eliminate any possibility of the differences being due to faulty timing. To A the new tests were much easier, to B a little easier, and to C a little harder.

Commencing in October, a test was given every day for a week, then once a week through the rest of the term. The examining work was done by the same person, under the same conditions, and at the same time every day. A again responded to the practice with marked gains which she held pretty well through a year of constant drill in multiplication, and in the other tables, in an attempt to make high scores set as standards. Her loss, through vacation, was less than the previous summer. B, as before, showed only small gains under constant practice, but her scores rose rapidly when the amount of the practice was not so great. Her loss through the Christmas vacation was not recovered until the spring vacation, but, from that time on to the end of the year and through vacation, the gain was marked. This was a time of marked physical growth also.

C showed more growth under practice than during the previous year, but, as her scores became stationary at a point less than half the standard score, she was made to take individual drill of five minutes a day under the care of a special teacher. Her scores at once began to rise, and the practice was continued until the close of the year, when C's scores were higher than those of the other two. During vacation, however, half of this gain was lost.

The test, September, 1911, showed B above A, and C, although much below the other two, considerably higher than at the beginning of the previous year. The investigation to determine standard scores, which was completed during the 1911 vacation, had proved that the standards used the previous year had been much too high. Accordingly, during the year 1911-12, after a short period of drill at the beginning, little attention was paid to the tables. The unexpected absences of the writer from the schools at times when the other tests were to have been given prevented the completion of the records at vacation times. The final tests show, therefore, simply the standings at the close of school. Note that C and A responded readily at the first of the year. C showed

marked improvement, not only in this test, but in all her arithmetic work. The slump that led to the low final score did not set in until about a month before the close of the year. B's loss during the term is easily accounted for. Through sickness in a lower grade she had dropped behind her class, but, with the return of physical vigor, and with awakened ambition, she took on extra work, and will, in the fall, enter the second grade ahead, her old class. Whether or not the strain of extra work was wise cannot be told as yet.

The thoughtful reader will see in these records the application of very many of the points discussed in this and the foregoing sections of the report. He will note repetitions of the same scores in successive tests when conditions are uniform; the rapid rise under practice, particularly after loss. He will see that rapid gain is followed by corresponding losses, and will appreciate the importance of each child's making the standard growth in each grade, if steady, positive advance is to be made without strain. The growth called for in the standard scores is not great from grade to grade, but the final ability is high. The reader will doubtless also have noticed the selective response of individuals to the various conditions, and will understand that, for effective control, *all* the major factors in intellectual growth must be controlled by the school. A girl whose scores decline under school drill is probably in no proper state to undertake additional work. What may be the price in loss of physical health that is paid for mental overstrain at critical periods in some children's development, we may some day realize.

Too much significance should not be attached to the results shown in the record. It should be remembered that they are not systematic scientific records of the abilities of these girls taken for the purpose of studying their growth from year to year, but chance records taken at separate times, and for different purposes, here thrown together and interpreted in the light of the writer's knowledge of the details. Nevertheless, they serve to point the way along which the road to full knowledge lies.

Finally, the significance of standards as a means of comparing and coördinating the work of different types of educational institutions should be appreciated. The child that is shown by school records through many years to have reached and held a standard score, the child that has acquired in the elementary school a standard equipment of fundamental tools (the three R's), and has applied them successfully in the higher fields of work in the high school, will be found to acquit himself satisfactorily in college, or in any other field of work to which his inclinations may lead him. It is the opinion of the writer that in standard tests and standard scores, both of achievement and of growth, will be found the solution of very many of the educational problems of the day.

### Conclusions

The illustrations presented in this section should make it plain that the results from comparative tests have a greater value than the mere benefit to teacher or class. Nor are these uses mutually exclusive. On

the contrary, by proper organization of experimental work, by proper planning of the supervision and coöperation a large amount of most valuable work could be done as regular school exercises. The organization of such work, its scope and character, together with the recommendations based upon the results of this investigation, are considered in the next section of this report.

## Section VIII

### Recommendations

#### General Significance of Investigation

To the reader who has given due consideration to the evidence presented in the preceding sections of this report the formulation of recommendations will probably seem a simple matter. Many suggestions for sweeping changes will undoubtedly have occurred to him as they have to the writer. If he be an honest reader, however, honest with himself and true to scientific principles, he will see, upon analysis of the situation, that the results of the investigation have merely revealed a condition; that whether or not any change that might be proposed would really be a change for the better cannot be predicted with certainty when the effects of many of the factors involved are unknown; that to make sweeping changes, or changes of any sort, merely because the new plan *seems* to be the logical solution of a recognized difficulty is to miss the point entirely. For the seemingly logical and the actual may bear no relation to each other, owing to the effect of unrecognized factors.

The writer hopes that the data from the testing work have made it plain that the product of arithmetic teaching in the New York public schools is an exceedingly variable quantity; that, so far as the fundamentals are concerned, the ability of an individual is in no way defined by telling his class, grade, or school. Whether he be in a low grade or high, whether he has had the worst teacher or the best, or has attended all his life the poorest school or the one with the best reputation, the data herein presented show that it will be impossible to predict his probable scores, except in terms of a variability that covers the entire range of the scale.

As to character of work, it is possible to be a little more specific. The average child in New York City will be able to do abstract work rapidly, but inaccurately; simple reasoning work, slowly. That these conditions are unsatisfactory may be granted without discussion; also that changes should be made. The individual variation should be controlled, accuracy should be secured without sacrificing speed, reasoning ability should be developed. So far the way is clear.

#### General Recommendations

The recommendation of specific changes to accomplish these ends, however, is another question. For the evidence is plain that the response of children to any situation is determined by the laws of their

own mental action and development. Consequently, the really significant products of the investigation are not that conditions are unsatisfactory, but (1) that efficiency is dependent upon the control of factors whose number and effects are, at present, unknown; and (2) that the information needed can be obtained through comparative tests and educational measurements. The recommendation of the writer is accordingly that systematic experimental work in testing and measurement be undertaken for the purpose of securing such essential knowledge. The remaining paragraphs of this section are but elaborations of this one idea; for, of necessity, the first work must be to determine, as completely and as precisely as possible, just what school work is at present accomplishing. For only as a base for comparison is secured can estimates of improvement or deterioration be formulated.

Any expectation of higher efficiency depends on the acquisition of knowledge of two sorts—that which tells the characteristics, growth, and needs of the child, and that which has to do with the actual process of teaching. Each of these, with its resultant problems, will be considered; but, while the attempt will be made to cover briefly the whole field, only those problems will be emphasized which have a bearing on the teaching of arithmetic.

### **Specific Recommendations**

Child study is a term of varied meaning. That which is studied about a child is determined by the purpose of the study. For improvement of teaching effort, a point of view must be adopted which makes of the child the raw material upon which the educational process acts, and by whose characteristics the process itself is conditioned. Yet the child is a living organism. He is the product of the past; he lives and is changed by his living; he grows toward the future. The first problems must be, therefore, to determine what features of the child's past and present social and mental life react on school work, and how they can be controlled.

### **Experimental Determination of Relation between Social Condition and Ability**

It is the common experience of mankind that children differ in ability. This granted, it would seem wise to determine how much they differ, and what adjustments it is necessary to make to such differences. It will be apparent at once that, in school, adjustment can only be made to gross differences in ability; but, from such differences of parentage and social station as are found in the city, such gross differences in mental ability are likely to arise. It is recommended that a study be made of the relation between the race, nationality, and social conditions of children, and their scores and growths in standard tests. For it is certain that many teachers and principals are attempting the seemingly

impossible in trying to follow through with children of poor and foreign parents the course that is thought too difficult for even the more favored.

### **Material Available for Reasoning Work**

It is further recommended that a study be made of the social life of all types of children, to determine the material available for problem work. For reasoning cannot be taught from a text alone. Reasoning is a process of adjustment to a situation, and, only as children have experienced the fundamental characteristics of a situation, can they intelligently make the necessary adjustments to it. At present teachers and principals collect such material, so far as this is done at all, for themselves. Systematic work of wider scope is needed, so that, where marked differences in the social life of the different types of children exist, they may be reflected in the schools.

### **Physical and Mental Growth**

Another factor conditioning the school work in arithmetic and other subjects is physical condition and physical growth. It is recommended that a special study be made of the relation between physical growth and mental growth, as measured by standard tests, so that, if the two are related, the proper adjustments may be made in school programs. This is, probably, one of the factors having the largest, but an obscure, influence in school work, and may be of very great importance.

### **Future Needs**

The determination of standard scores and standard growths should be made not alone upon a basis of scores actually made by children, but upon the abilities each child is likely to need. Here the determining conditions are again social. It is recommended that systematic study and examination of individual children leaving school to go to work be carried on for several years, both that the needs of the different classes of children may be determined, and that the changes following the close of the school work may be measured.

### **Determination of Efficient Methods**

From the standpoint of the teaching process itself, next to standards, the most important problem is that of ministering to the needs of the individual. That this is a tremendous problem, whose solution will take many years, is conceded; but that the final solution will be hastened, if the work is started at once, is also true. Children must be taught in groups, and children must receive individual care and instruction, when needed.

To meet these two opposing conditions, compromise is inevitable, but special methods are already beginning to appear. The use of the comparative graph in this connection was discussed above. Another device that, in some cases, has proved very effective, is that of placing one or two teachers in a school, but assigning them no regular work. Such unassigned teachers devote all their time to work with individuals sent to them from any class for help on particular points. It is recommended that the efficiency of these various devices be measured.

The best method of developing both speed and accuracy in abstract work should also be determined experimentally. Specifically, four groups of children should be formed, one thousand children to a grade, grades 3A to 8B inclusive, 48,000 children in all. The basis of selection should be the scores made in a formal test at the opening of school in September, the four groups being so selected as to be of equal ability, grade by grade. One group should be used as a control and should carry out the regular work *without changes of any kind*. Comparisons of the growths made in the other groups with that of this group would show the merits or demerits of the changes made in the work of the other groups.

One of the three remaining groups should work for speed. Standard scores in speed should be set for each grade, and speed tests should be used each day as practice exercises. Emphasis should be placed on speed of work, but to avoid the evil effects of over-drill, as soon as a child is able to make the standard score in speed, the accuracy of his work should be determined, and he should then strive to reach a standard score in accuracy slightly (say 5 per cent.) greater than the accuracy of his past work without in any way decreasing his speed. In other words, the *number* of examples of a given kind *completed* in a given time should be determined *first* each day. If the speed falls below the standard the accuracy of work should not even be determined. If, however, the child equals or exceeds the standard speed, then accuracy should be considered, reasons for inaccuracy determined, and definite corrective work undertaken if the need for it is discovered. Any attempt to work at a higher speed than the standard should be discouraged by increases in the standard for accuracy. In other words, in this group standard speed would be attained by all, but development in accuracy would vary from individual to individual.

On the other hand, in one of the other groups exactly the opposite procedure should be followed: standard accuracy would be attained, but development in speed would vary from individual to individual. A high degree of accuracy (say 100 per cent. or at least 90 per cent.) should be adopted for all as the standard, each child being allowed to work at his own rate. Each day the accuracy of work should be determined first. When any child attains the standard accuracy he should have his speed of work considered and attempt to make a slightly higher score in speed (say 5 per cent.) without sacrificing accuracy.

In the third group speed and accuracy should be developed together. In the very first test the children should be warned that speed and accuracy are both important, and that they are to choose a speed of work that will enable them to work at a reasonable degree of accuracy, leaving the definition of reasonable to the individual. In the resulting scores both speed and accuracy should be determined, and in the succeeding tests each individual should attempt to make slightly higher scores in both speed and accuracy. If any child succeeds in making the increase in one quality and not the other, he should concentrate his efforts upon the one in which he is lacking until both increases have been attained. In this group, therefore, speed and accuracy would increase together.

A formal test, similar to the initial test, should be repeated each half year, and the growths of the four groups compared. In all groups systematic records of the time devoted to the work should be kept. In fact the experiment should be carefully supervised throughout. Full explanations of the plans and results to teachers should be made, systematic training of those teachers unable to grasp the essential ideas or to initiate methods of their own should be undertaken, and above all, the experiment should be continued through two full years to measure the effects of the vacation period upon the resulting products. Such an experiment, ably carried out, would do more to determine once for all the plan of work best fitted to each grade to insure both accuracy and speed than all the academic discussion that could be devised.

It will be objected by some that the years of childhood are too few and too precious to be wasted in experimental trials of new and possibly injurious methods, etc. To all such objections, based for the most part on fundamental misconceptions of the purpose and extent of the experimental work planned, many answers can be made. (1) No general reorganization of school work is called for in such an experiment: the time required would not be over ten minutes a day and the rest of the work in Arithmetic would proceed as usual. (2) The experience of the writer tends to prove that all three experimental groups would show much larger growths than the control group. The stimulating effects upon the teachers of new methods of work, new points of view, would far outbalance any injurious effects of a poor method, while the gain, if one method proved very much superior to the others, would not be a small gain for a few children, but a permanent gain in educational knowledge that would be a benefit to all our present schools and to all future generations of children. (3) The present course in arithmetic and all future courses that do not rest upon accurate experimental data are only *unchecked* experiments based upon opinions merely, and confirmed and overthrown by opinions also. Witness the suggestion that the new course of study in arithmetic now (July, 1912) under consideration be tried for a year *in all* the schools of the city to determine its merits. Its real merit or demerit depends upon the effects produced

upon the children, and to determine those effects even a city of New York's wealth and opportunities has by its own confession nothing better than the opinion of the very people by whom the course is being designed. The labors of Rice and Stone, as well as the results of this investigation, make it certain that no such changes in the course of study as are proposed can effect more than a very slight improvement at best in the general efficiency of the work as long as the fundamental factor of individual differences is neglected. (4) As a final argument, it should be remembered that, in view of the effort, time and money expended, conditions could scarcely be worse; that any systematic, conscientious effort along a new line is sure to be slightly better, and that any discovery of fundamental laws is certain to lead to a new era of progress.

Other control experiments of similar character are recommended. The determination of whether oral drill or written drill is the more important is one; the effect on Test 7 of daily practice on the tables, as compared with the same amount of practice in abstract examples, similar to Test 7, is another. Similar experiments to determine the relative merits of oral and written work in speed reasoning upon the problem work in Test 8 are particularly recommended. It is probable that great improvements could easily be effected in reasoning.

#### **Bureau of Investigation and Appraisal**

It is evident that any attempt to put these recommendations into practice would involve teachers and schools in much extra work and useless confusion unless the experiments were well planned. At the same time, the importance and necessity of the work make it imperative that such experiments be carried out. Accordingly, it is recommended that a new department be created—a Bureau of Investigation and Appraisal.<sup>1</sup> The experimental work of this nature, already undertaken by many smaller cities, the plans for the coming year in two of the larger cities.<sup>2</sup> suggest that New York City is not making the most of its wonderful opportunities to profit by similar work.

In bringing this report to a close, the writer wishes to emphasize again the true significance of the investigation. It is, that, in spite of the expenditure of millions of dollars yearly, in spite of hours of labor and years of effort, the gross inefficiency of present conditions is caused by lack of exact knowledge of conditions acted upon and of effects produced. That this need no longer be true the writer believes the evidence presented proves beyond question. The one thing lacking is organized effort along similar lines, on such a scale and for such a period, that conclusive results may be obtained.

<sup>1</sup> See Professor Elliott's recommendation in his report.

<sup>2</sup> Detroit, Mich.; Boston, Mass.



**PROMOTION, NON-PROMOTION, AND PART-TIME**



REPORT ON  
EDUCATIONAL ASPECTS OF THE  
PUBLIC SCHOOL SYSTEM

OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY  
OF THE BOARD OF ESTIMATE  
AND APPORTIONMENT

PART II

*Subdivision I*

*Elementary Schools*

SECTION F.—PROBLEMS IN ELEMENTARY SCHOOL ORGANIZATION  
AND ADMINISTRATION

III. Promotions and Nonpromotions, and Part Time

BY

FRANK P. BACHMAN, PH.D.

Formerly Assistant Superintendent of Schools, Cleveland, Ohio

CITY OF NEW YORK

1911-1912



# TABLE OF CONTENTS

	Page
Introductory	
I. Promotion and Non-Promotion: General Problem . . . . .	560
1. Rate of promotion in each borough and in the greater city . . . . .	560
2. Rate of promotion by sex . . . . .	562
3. Rate of promotion in the 1A grade . . . . .	563
(1) Causes of low rate of promotion in the 1A grade . . . . .	563
(a) Inability to use the English language as a factor . . . . .	563
(b) Immaturity as a factor . . . . .	564
(c) Over-size classes as a factor . . . . .	565
(d) Part-time as a factor . . . . .	566
(e) Absence as a factor . . . . .	566
(f) Summary . . . . .	567
(2) Increasing the rate of promotion in the 1A grade . . . . .	567
(3) Recommendations . . . . .	568
4. "Forced promotions" . . . . .	569
(1) Assertion of teachers and principals . . . . .	569
(2) Variation in rate of promotion . . . . .	570
(a) With absence, over-age, etc. . . . .	570
(b) In different schools . . . . .	570
(c) In same grade of different schools . . . . .	571
(d) In different grades of the same school . . . . .	573
(3) Conclusions . . . . .	574
5. Increase in the rate of promotion . . . . .	574
(1) Increase in rate of promotion . . . . .	574
(2) Increase justified . . . . .	577
(a) Number of over-age pupils . . . . .	578
(b) Amount of elimination . . . . .	582
(3) Increase in rate of promotion and forced promotions . . . . .	584
6. Conditions favorable to a maximum rate of promotion . . . . .	584
(1) The maximum rate according to the City Superintendent of Schools . . . . .	585
(2) Conditions determining maximum rate of promotion . . . . .	586
(3) Disregard of conditions favorable to a maximum rate of promotion . . . . .	586
(a) Disregard of the proper length of the elementary school period . . . . .	586
(b) Disregard of the length of attendance within the limits of the elementary school period . . . . .	590
(c) Disregard of varying abilities and educational needs of different groups of children . . . . .	593
(d) Summary . . . . .	595

I. Promotion and Non-Promotion: General Problem (Continued)	
6. Conditions favorable to a maximum rate of promotion (continued)	
(4) Changes needed to attain the maximum rate of promotion	595
(a) Adjusting the length of the different courses of study	596
(b) Adjusting the requirements and determining the number of different courses	597
(5) The maximum rate of promotion	599
(6) Conclusions	601
II. Promotion, Non-Promotion, and Size of Class	601
1. Maximum size of regular classes	602
2. Number of pupils in classes of each size	602
3. Rate of promotion in classes of each size	606
4. Elimination of over-size classes	609
5. Over-size classes as a factor in non-promotion and congestion	610
6. Conclusions	610
III. Promotion, Non-Promotion, and Absence	611
1. Number of children absent ten days and less, eleven to twenty, etc.	611
2. Rate of promotion in each of the several periods of absence	614
3. Absence as a factor in non-promotion and congestion	616
4. Conclusions	617
IV. Promotion, Non-Promotion, and Over-Age	618
1. Meaning and significance of over-age	618
2. Number of over-age pupils in regular classes	621
3. The degree of over-age	622
4. Rate of promotion for over-age pupils	624
5. Over-age as a factor in non-promotion and congestion	626
6. Probable additional cost to provide "E" classes for pupils two and more years over-age	628
7. Conclusions	628
V. Promotion, Non-Promotion, and Inability to Use the English Language	630
1. Number of pupils in regular classes unable to use the English language	630
2. Effect of inability to use the English language on rate of promotion	631
3. Rate of promotion for pupils able and for pupils unable to use the English language	632
4. Probable additional cost to provide "C" classes for pupils unable to use the English language	633
5. Inability to use the English language as a factor in non-promotion and in congestion	634
6. Conclusions	635

# TABLE OF CONTENTS

553

Page

VI. Promotion, Non-Promotion, and Part-Time . . . . .	636
1. Meaning of whole-time and part-time . . . . .	636
2. Conditions giving rise to part-time . . . . .	636
3. Different attitudes toward part-time . . . . .	637
4. Part-time at the end of the Feb.-June term, 1911 . . . .	637
5. The elimination of part-time . . . . .	640
6. Questions involved in part-time . . . . .	641
7. Rate of promotion in whole-time and in part-time classes . . . . .	641
8. Part-time as a factor in non-promotion and congestion . .	644
9. Kinds of part-time classes . . . . .	644
10. Number of pupils in each kind of part-time class . . . .	646
11. Rate of promotion in A. M. and in P. M. part-time classes . . . . .	647
12. Rate of promotion in whole-time and in each kind of part-time class . . . . .	649
(1) Whole-time and Ettinger part-time classes . . . .	649
(2) Whole-time and alternating part-time classes . .	650
(3) Whole-time and A. M. and P. M. part-time classes . . . . .	650
(4) Ettinger part-time and alternating, and A. M. and P. M. part-time classes . . . . .	650
(5) Alternating and A. M. and P. M. part-time classes . . . . .	651
13. Conclusions . . . . .	652
VII. Pupils Leaving the Elementary School . . . . .	653
1. Failure to collect data on pupils leaving school . . . .	653
2. Number of pupils leaving during Feb.-June term, 1911 .	654
3. Ages and grades of pupils leaving school . . . . .	655
4. Effects on reports of taking no account of pupils leaving .	655
5. Reducing the number leaving school . . . . .	658
6. Conclusions . . . . .	658
VIII. Conclusions and Recommendations . . . . .	659





## PROMOTION, NON-PROMOTION, AND PART-TIME

### Introductory

The State, through its Compulsory Education Law, seeks to guarantee to each child of the City of New York, by the time he is fourteen years old, an education equal to graduation from the elementary school.<sup>1</sup> Physical and mental defects, conditions in the home and in the school, which militate against children completing the elementary school course of study, are, therefore, of both social and educational interest.

The factors which contribute to prevent children from graduating from the elementary schools of the City of New York by the time they are fourteen years of age, as is contemplated by the Compulsory Education Law, fall under three heads: Late entrance into school, slow progress through the school, and late entrance and slow progress together.

Failure to complete the elementary school course of study by the fourteenth year, in so far as this is due to slow progress, is the direct result of the child's failure to secure regular promotion. To determine the causes which prevent children from receiving promotion, eight committees were appointed, in the fall of 1909, by the City Superintendent of Schools. These eight committees were in substantial accord in reporting the following, among others, as the chief causes of failure on the part of pupils to secure regular promotion:<sup>2</sup>

"PART-TIME, which prevents pupils from doing the work of the lower grades thoroughly."

"EXCESSIVE SIZES OF CLASSES, which prevent teachers giving necessary individual instruction."

"IRREGULAR ATTENDANCE. Due to poor home conditions; looseness of parental control; ignorance of parents; lack of opportunities for home study; poverty of home, requiring pupils' assistance; sickness of other members of the family; lack of proper clothing; feeble health of individual pupils; poverty of surroundings."

"LATE ENTRANCE INTO SCHOOL, due to two causes: The presence of immigrant children, and the fact that many children are sent to private schools before they enter the public schools."

<sup>1</sup> See Section 622 of Compulsory Education Law.

<sup>2</sup> Twelfth Annual Report of the City Superintendent of Schools, of the City of New York, pages 80 and 81.

"SLUGGISH MENTALITY. Sometimes this feature takes the form of positive mental defect, and sometimes it characterizes pupils as slow in receptivity and response. Sometimes it takes the form of moral defects, such as dishonesty, lying, and cheating, which are intensified by improper reading, the following of bad examples, and petty defiance of law in the streets."

"IGNORANCE OF THE ENGLISH LANGUAGE, due to foreign birth and to the fact that English is not the language of the home."

From conference with members of the foregoing committees, it was learned that no comprehensive study of the causes of non-promotion was made by these committees, and that their conclusions were based on the personal impressions of the several members.

The studies made of the causes of non-promotion up to the present time may be characterized as descriptive studies, or as preliminary surveys. They are, nevertheless, very valuable. Their worth lies, however, in focusing the attention of teachers and superintendents on the problem of non-promotion, in suggesting probable causes, and in indicating where improvements should be made and the need of further investigation, rather than in having determined finally the causes of non-promotion and the extent to which non-promotion is due to each cause.

President Mitchel addressed a letter, on May 10, 1911, to President Winthrop, of the Board of Education, requesting the following information, by grades, for the February-June term, 1911:

1. The name of each child.
2. The sex of each child.
3. Age on June 30, 1911, computed from registration card.
4. Whether promoted on January 31, 1911.
5. Whether failed of promotion January 31, 1911.
6. Whether promoted between February 1 and June 30, 1911.
7. Whether promoted on June 30, 1911.
8. Whether on register June 30, 1911.
9. Whether regular or irregular in attendance.
10. Number of days absent.
11. Whether over-age, and how much for grade.
12. Whether in forenoon or afternoon part-time class.
13. Whether in class having less than thirty-five pupils; thirty-five to forty; forty to fifty; fifty to sixty, and over sixty.<sup>1</sup>
14. Whether unable to use the English language.

In compliance with President Mitchel's letter, Superintendent Maxwell prepared two blanks for the collection and tabulation of the information requested—one for the use of the teachers, and one for the principal's summary of the data on the teacher's blank.

<sup>1</sup> Taken from Page 4 of President Mitchel's letter to President Winthrop.

On examination, we found that the form of the blanks, as prepared, rendered it impracticable to tabulate the data in more than one way; it was also found that the data were not grouped with reference to promotion and non-promotion, and that the directions for the use of teachers and principals in filling the blanks were inadequate. Accordingly, a revision of Superintendent Maxwell's blank was immediately undertaken.

With the time at our disposal—not more than a few days, because the end of the school year was near at hand—it was impossible to change the proposed method of collecting the data so that the data might be readily tabulated in other desirable ways. Changes were, however, made in the teachers' blank so that practically all the items of information requested by President Mitchel were called for. The principals' blank was revised so that the data, when tabulated, would show the number of "repeaters" in each grade; also show by grades, and whether promoted or not promoted, the number of children in each kind of class (whole-time class or part-time class), the number in the classes of each size (in classes under thirty-five, thirty-five to forty, . . . ), the number absent less than ten days, ten to twenty days, . . . , the number of each age (under normal, normal, less than one year over normal, . . . ), and the number unable to use the English language. The directions to teachers and principals were likewise revised, and a number of new directions were added. The revised blanks, along with the amended directions, were submitted to Superintendent Maxwell for criticism and suggestion. Copies of these blanks in their final form, together with a list of supplementary directions, are on file with the Committee on School Inquiry.

Superintendent Maxwell was asked to assume the responsibility for distributing the blanks to the schools. He did so, and they were in the hands of the teachers by the beginning of the last week of June. He had sent with the blanks a letter in which he called attention to the necessity of exercising care and dispatch in filling the blanks. By July 10th nearly all the blanks had been filled, and received, and they have been filed with the Committee on School Inquiry.

The injunctions to fill the blanks promptly and accurately were heeded by the principals, so far as the time limit was concerned, but the blanks contained many errors, which it took our staff of four tabulators—later five—about four weeks to correct before the tabulation of the data could be commenced. There were 488 principals' reports. Of these, 179 were correct. 309, or 63 per cent., contained errors. Of the 309 incorrect reports, 186 contained slight inaccuracies. 123, or 25 per cent., contained errors of so serious a nature as to compel reference to the teachers' reports, and these, in turn, were, in many instances, so faulty as to need reconstruction wholly or in part.<sup>1</sup>

Even when due allowance is made for the haste with which the

<sup>1</sup>A more complete statement concerning the errors in these blanks has been filed with the Committee.

blanks were filled, owing to lateness of date (the last week of the term), there is no excuse for so many errors. The City Superintendent has found that the statistical returns made to him contain similar errors, and that much time is consumed in correcting them. Such errors are wasteful, and teachers and principals should learn to minimize them.

The correction of the errors made by teachers and principals in filling the blanks, the tabulation of the data, and the necessary computation occupied our staff of clerks continuously until December 4, 1911.<sup>1</sup>

The validity of the data collected for this investigation is in no way affected by the method of making promotions in vogue in the elementary schools of the city, or by whether a given child should or should not have been promoted. The facts collected only have to do with, and only throw light upon promotions and non-promotions as they were made at the end of the February-June term of 1911.

It was expected by those who planned this investigation<sup>2</sup> that, in addition to furnishing valuable information, the collection of the foregoing data would supply the basis of drawing conclusions with reference to whether or not the causes, as reported by the eight committees mentioned above, are causes of non-promotion; and also to what extent non-promotion is due to each cause.

The data collected, and herewith reported in the following tables, supply no adequate basis for *final* conclusions. Because, although there appears to be, for example, a direct connection between the per cent. of promotion and the number of days absent, there is no way of telling from the table on absence whether part of the difference in the per cent. of promotion might not be due to causes other than absence—to the fact that pupils were in different kinds of classes (in part-time classes or whole-time classes), or in classes of different sizes, or were of different ages, or were of different nationalities. . . . Until the retarding force of these and other probable causes is equalized or neutralized—i. e., until the pupils in the several groups, when grouped, for example, on the basis of the number of days absent, are from the same kind of class, from classes of the same size, are of the same age, of the same sex, of the same nationality—until this is done—and it was impossible to do it in this investigation<sup>3</sup>—it is unscientific to draw more than *tentative* conclusions about the causes of non-promotion and the retarding force of particular causes.

Though no *final* conclusions can be properly drawn from the collected data, with regard to the causes of non-promotion or with reference to what extent non-promotion is due to each cause, *these data do supply the basis for tentative conclusions*, and for certain recommendations, and supply, also, a fund of valuable information, as will appear

<sup>1</sup> By that time, other important inquiries were under way, and we had entered on the period of uncertainty about the continuance of the inquiry. Work on this investigation into promotions and non-promotions was, therefore, after conference with President Mitchel, deferred. The work was resumed about February 1, 1912.

<sup>2</sup> President Mitchel's letter to President Winthrop, dated May 10, 1911.

<sup>3</sup> See remarks on page 5 on the forms on which these data were collected.

in this report. The tables show by grades, for the February-June term of 1911, the following:

1. They show, for the first time for the City of New York, the number of pupils (in regular classes), in each kind of class (whole-time class or part-time class); the number of pupils in classes of different sizes (in classes under thirty-five, thirty-five to forty, forty-one to fifty . . . . .); the number of days each pupil was absent (absent ten days or less, eleven to twenty days, twenty-one to thirty days); the number of pupils unable to use the English language, and the number of pupils leaving school.<sup>1</sup> Only as such information is at hand is it possible to have definite knowledge of the schools and of the conditions affecting their work.

2. They show, for the first time for the City of New York, the number of pupils promoted and the number not promoted in the classes of each size, in each kind of class (whole-time class and part-time class), also the number promoted and not promoted for each of the several periods of absence, for each of the several ages, and among those able and unable to use the English language.

3. They show that there is a definite relation (in regular classes) between promotion and non-promotion, and size of class, absence, age, ability to use the English language, and kind of class—when each is considered by itself.

4. They also reveal school conditions, i. e., over-size classes, a large amount of absence, the presence in large numbers of over-age pupils in regular classes, which should be corrected, and hence supply valuable data for administrative action.

The register in regular classes at the end of the February-June term, 1911, the number promoted, and the number not promoted—the basis of this report—were, for the several grades and the sexes, as follows:

Grades	On Register Before Promotion June 30, 1911			Promoted on June 30, 1911			Not Promoted on June 30, 1911		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
1A	21,898	21,114	43,012	16,726	15,972	32,698	5,172	5,142	10,314
1B	25,302	24,530	49,832	22,358	21,862	44,220	2,944	2,668	5,612
2A	20,370	19,237	39,607	18,061	17,209	35,270	2,309	2,028	4,337
2B	22,488	22,120	44,608	20,336	20,071	40,407	2,152	2,049	4,201
3A	20,264	19,916	40,180	18,101	17,978	36,079	2,163	1,938	4,101
3B	21,496	21,415	42,911	19,373	19,564	38,937	2,123	1,851	3,974
4A	19,560	19,013	38,573	17,437	17,260	34,697	2,123	1,753	3,876
4B	20,174	19,735	39,909	18,110	17,878	35,988	2,064	1,857	3,921
5A	18,556	18,267	36,823	16,391	16,329	32,720	2,165	1,938	4,103
5B	17,653	18,382	36,035	15,703	16,634	32,337	1,950	1,748	3,698
6A	16,351	16,522	32,873	14,532	14,730	29,262	1,819	1,792	3,611
6B	15,632	15,502	31,134	13,898	13,949	27,847	1,734	1,553	3,287
7A	13,579	14,088	27,667	11,898	12,439	24,337	1,681	1,649	3,330
7B	12,176	12,615	24,791	10,891	11,203	22,094	1,285	1,412	2,697
8A	10,248	10,864	21,112	9,155	9,745	18,900	1,093	1,119	2,212
8B	9,587	9,958	19,545	9,002	9,458	18,460	585	500	1,085
Total . . . .	285,334	283,278	568,612	251,972	252,281	504,253	33,362	30,997	64,359

The data for this table were computed from reports to the Committee on School Inquiry, June, 1911.

<sup>1</sup> Data on the ages of pupils, in relation to grade, have been given annually since 1904.

### I.—Promotion and Non-Promotion: General Problem

In the elementary schools of the city, the regular time for making promotions and non-promotions is the last day of the school term. Promotions are, however, also made during the course of the term. The total number of promotions for a term is, therefore, the sum of the promotions made during the term and those made on the last day of the term.<sup>1</sup> *The data herein presented, it should be observed, relate only to promotions and non-promotions made at the end of the term, and it should also be noted that these data have to do only with promotions and non-promotions in regular classes<sup>2</sup> of the elementary school, exclusive of the kindergarten.*

#### 1. Rate of Promotion in Each Borough and in the Greater City

The City of New York includes the Boroughs of Manhattan, Brooklyn, the Bronx, Queens, and Richmond. Table I gives for each of the boroughs and for the Greater City the per cent. of promotion by grades at the end of the February-June term, 1911:

Table I

Grades	Per Cent. of Promotion in Borough of Manhattan	Per Cent. of Promotion in Borough of Brooklyn	Per Cent. of Promotion in Borough of The Bronx	Per Cent. of Promotion in Borough of Queens	Per Cent. of Promotion in Borough of Richmond	Per Cent. of Promotion in Entire City of New York
1A	75.37	76.49	76.13	76.97	75.75	76.02
1B	88.88	88.34	90.13	88.40	86.92	88.74
2A	88.90	88.76	90.24	89.28	89.76	89.04
2B	91.28	89.90	90.25	90.52	91.08	90.58
3A	90.08	89.54	89.46	90.66	87.12	89.79
3B	91.25	89.94	90.74	91.60	91.64	90.74
4A	90.51	89.38	89.58	90.68	88.26	89.95
4B	90.76	89.58	89.09	91.43	90.05	90.18
5A	89.52	88.21	88.45	89.93	84.91	88.86
5B	90.32	89.06	88.94	91.02	89.82	89.74
6A	89.01	89.16	88.19	89.86	87.67	89.02
6B	90.07	89.08	88.52	89.32	89.53	89.44
7A	88.31	87.08	88.82	89.31	87.21	87.96
7B	89.32	88.26	90.37	90.13	89.92	89.12
8A	89.92	88.78	89.15	91.28	90.87	89.52
8B	93.71	94.45	95.38	96.14	97.25	94.45
Total.....	88.96	88.22	88.71	89.47	88.30	88.68

The data for this table were computed from the reports to the Committee on School Inquiry, June, 1911.

<sup>1</sup> See Annual Report of the City Superintendent of Schools for 1910-11, Table XXXVII, pp. 66 and 67.

<sup>2</sup> Regular classes are to be distinguished from "C" classes (for non-English-speaking pupils); from "D" classes (for over-age pupils preparing for employment certificates); from "E" classes (for over-age and retarded pupils), and from classes for defective children.

The difference between the per cent. of total promotion in the several boroughs, it will be observed, is small. The lowest per cent. of total promotion was, in Brooklyn, 88.22 per cent., and the highest, in Queens, 89.47 per cent.—a variation of but 1.25 per cent.

In each of the boroughs the lowest per cent. of promotion was in the 1A, and the highest in the 8B grade, but, within the same grade, the rate of promotion varied little among the boroughs. The per cent. of promotion ranged in the

1A	from 75.37% to 76.97%—a variation of 1.60%
1B	" 86.92% " 90.13%—" " 3.21%
2A	" 88.76% " 90.24%—" " 1.48%
2B	" 89.90% " 91.28%—" " 1.38%
3A	" 87.12% " 90.66%—" " 3.54%
3B	" 89.94% " 91.64%—" " 1.70%
4A	" 88.26% " 90.68%—" " 2.42%
4B	" 89.09% " 91.43%—" " 2.34%
5A	" 84.91% " 89.93%—" " 5.02%
5B	" 88.94% " 90.32%—" " 1.38%
6A	" 87.67% " 89.86%—" " 2.19%
6B	" 88.52% " 90.07%—" " 1.55%
7A	" 87.08% " 89.31%—" " 2.23%
7B	" 88.26% " 90.37%—" " 2.11%
8A	" 88.78% " 91.28%—" " 2.50%
8B	" 93.71% " 97.25%—" " 3.54%

If the several grades, exclusive of the 1A and the 8B (fourteen), are grouped according to per cent. of promotion, the distribution in each of the boroughs is as follows:

Boroughs	Number of Grades Promoting Less Than 87%	Number of Grades Promoting from 87% to 88%	Number of Grades Promoting from 88% to 89%	Number of Grades Promoting from 89% to 90%	Number of Grades Promoting from 90% to 91%	Number of Grades Promoting 91% and Above
Manhattan.....	0	0	3	4	5	2
Brooklyn.....	0	1	5	8	0	0
The Bronx.....	0	0	5	4	5	0
Queens.....	0	0	1	5	4	4
Richmond.....	2	3	1	4	2	2
Total Number of Grades Promoting a Given Per Cent. ....	2	4	15	25	16	8

In the great majority of the grades in the schools of each borough, it will be noted, the per cent. of promotion ranged between 88 per cent. and 91 per cent., while the most common per cent. of promotion was from 89 per cent. to 90 per cent.

In the Greater City, as in the several boroughs, the lowest per cent.

of promotion was in the 1A, and the highest in the 8B grade. In the remaining fourteen grades the rate of promotion was from 87 per cent. to 88 per cent., in one grade; from 88 per cent. to 89 per cent., in two; from 89 to 90 per cent., in eight; and from 90 per cent. to 91 per cent., in three. With the exception of the 1A and the 8B grades, the most frequent rate of promotion, both in the Greater City and in the boroughs, was, therefore, from 89 per cent. to 90 per cent.

## 2. Rate of Promotion by Sex

While in the schools of the city there are classes in which boys and girls are taught together, the prevailing custom, even in the lower grades, is to segregate the sexes. Table II gives by grades the per cent. of boys and the per cent. of girls promoted at the end of the February-June term, 1911; also the per cent. of girls promoted over the per cent. of boys promoted:

Table II

Grades	Rate of Promotion		Rate of Promotion for Girls Over Rate of Promotion for Boys
	Boys	Girls	
1A	76.38	75.65	— .73
1B	88.36	89.12	.76
2A	88.66	89.46	.80
2B	90.43	90.74	.31
3A	89.33	90.27	.94
3B	90.12	91.36	1.24
4A	89.15	90.78	1.63
4B	89.77	90.59	.82
5A	88.33	89.39	1.06
5B	88.95	90.49	1.54
6A	88.87	89.15	.28
6B	88.91	89.98	1.07
7A	87.62	88.29	.67
7B	89.45	88.81	— .64
8A	89.34	89.70	.36
8B	93.90	94.98	1.08
Total.....	88.31	89.06	.75

The data for this table were computed from the reports to the Committee on School Inquiry, June, 1911.

The rate of promotion for all girls was, it will be observed, .75 of 1 per cent. higher than for all boys, and the rate was also higher in each of the grades, with the exception of the 1A and the 7B, in which grades the higher rate was in favor of boys. The largest difference in the rate of promotion in favor of girls was, in the 4A grade, 1.63 per cent.; the smallest, in the 6A, .28 of 1 per cent. These differences in the favor of



girls are of course small, but, affecting, as they do, large numbers of pupils, they represent a considerable difference in the actual number of boys and girls promoted. (At the rate for girls, 2,140 more boys would have been promoted than were actually advanced.) They also indicate that the elementary school, practically from the lowest to the highest grade, when judged solely on the basis of promotion, is slightly more successful in dealing with girls than in dealing with boys.

### 3. Rate of Promotion in the 1A Grade

The rate of promotion, as we have seen (Table I), was the lowest in the 1A grade. In the other grades, taken together, only one child in ten failed of promotion, but in the 1A almost each fourth child failed of advancement, with the result that 10,314 1A pupils were left back in June to reënter this grade in September, to overcrowd classes, and to congest the school.<sup>1</sup>

#### (1) Causes of Low Rate of Promotion in the 1A Grade

The requirements of the 1A grade should be relatively no higher than the requirements of other grades; hence, conditions being the same, the rate of promotion should be no lower. As a matter of fact, however, the rate of promotion for the 1A grade is, as a rule, lower than for other grades. Whether this is necessarily so is a matter of doubt, and deserves careful investigation.

From conferences with administrative officials, principals, and teachers, it was learned that they held the low rate of promotion in the 1A grade due to (a) the number of pupils unable to use the English language; (b) immaturity of pupils; (c) over-size classes; (d) part-time classes, and (e) irregular attendance and late entrance during the course of the term.

#### (a) Inability to Use the English Language as a Factor

The total register of the 1A grade, June 30, 1911, was 43,012. According to the reports made to us, there were 3,648 1A pupils who were unable to use the English language on entrance to the grade,<sup>2</sup> leaving 39,364 1A pupils who, in the opinion of the teachers, had no unusual difficulty with our language. Of these 39,364, 30,531 were promoted, and 8,833 were not promoted. Hence, the rate of promotion for 1A pupils, when all those unable to use the English language are excluded, was 77.56 per cent., which is but 1.54 per cent. higher than the rate (76.02 per cent.) for the grade as a whole.<sup>3</sup>

Assuming that all other conditions affecting promotion and non-

<sup>1</sup> See table on p. 559.

<sup>2</sup> See Table XXVII, p. 631.

<sup>3</sup> See Table XXVIII, p. 632.

promotion were the same for the two groups of children—those able, and those unable, to use the English language—the per cent. of promotion in the 1A grade was, therefore, lower by but 1.54 per cent. than it otherwise would have been, because of the presence of 1A pupils unable to use the English language. Hence, inability of pupils to use the English language on entrance to the grade is, at best, but a minor factor in causing the low rate of promotion in the 1A grade.<sup>1</sup>

### (b) Immaturity as a Factor

The maturity of a child may be judged (a) in view of his physical development; (b) in view of his mental development, and (c) in view of his age. Maturity can be judged best in view of physical and mental development, but so difficult is it so to judge maturity and so crude is education as yet in its methods, that the maturity of children is judged very largely in view of age alone. Hence, in school practice, age is taken as the index of maturity. Accordingly, certain age limits have been fixed as the normal age for each grade of the school, and a child whose age falls within the normal age limits fixed for a grade is regarded as being sufficiently mature, both physically and mentally, to do the work of that grade. The age-grade standard is therefore the only basis we can use here in judging of the maturity or immaturity of the children found in a grade. To be sure, when maturity is judged by such standards, children will be found in all grades who are of the normal age for the grade, but who are manifestly immature for the grade.

Table III gives, by grades, the number of children out of a thousand under normal age, of normal age, under one year over normal, between one and two years over normal, between two and three years over normal, and three years and more over normal, when the distribution is made on the basis of the per cent. of children of the corresponding age in the grade June 30, 1911:

<sup>1</sup> The effect of the inability to use the English language on the rate of promotion in the 1A grade should not be confused with its effect on the actual number of non-promotions in this grade. See Table XXX, p. 634.

Table III<sup>1</sup>

Grades	Below Normal Age	Normal Age	Under 1 Year Over Normal	Between 1 and 2 Years Over Normal	Between 2 and 3 Years Over Normal	3 Years and More Over Normal
1A	10	857	91	29	7	6
1B	10	805	127	38	12	8
2A	21	706	177	61	22	13
2B	19	703	171	67	25	15
3A	30	606	206	100	35	23
3B	21	602	204	103	42	28
4A	33	499	249	127	58	34
4B	26	517	229	133	62	33
5A	32	461	241	161	74	31
5B	28	482	236	160	67	27
6A	41	431	267	181	64	16
6B	39	466	270	163	53	9
7A	53	448	290	160	43	6
7B	47	511	274	134	29	5
8A	71	505	275	122	23	4
8B	75	551	243	106	22	3

It will be observed that a larger proportion of the children in the 1A grade are of normal age than in any other grade. Hence, the ages of the children in the 1A grade correspond more nearly to the normal age fixed for the 1A grade than is the case in any other grade of the elementary school.

When judged by the age-grade standards as determined by the City Superintendent of Schools, there is, therefore, no ground for holding that 1A pupils, in large numbers, are immature for their grade and, consequently, for assuming that immaturity is any considerable factor in causing the low rate of promotion found in the 1A grade.

### (c) Over-Size Classes as a Factor

1A classes, according to the by-laws of the Board of Education, should not contain more than fifty pupils, and fifty is regarded in most cities as too large for the most effective work. Hence, 1A classes having more than fifty pupils may be considered over-size.

There were in the 1A grade, June 30, 1911, according to the reports made to us, 15,025 pupils in classes having more than fifty pupils. The rate of promotion for 1A pupils in these over-size classes was 73.46 per cent.<sup>2</sup> If the 15,025 pupils in over-size classes are subtracted from the total register of 1A pupils (43,012), there remain 27,987 pupils in classes of fifty and under. The rate of promotion for these classes was 77.40

<sup>1</sup> Table III is based upon Table XXIII of this report, see p. 621. The age-grade standards employed in Table III are those of the City Superintendent of Schools.

<sup>2</sup> See Table XVII, p. 608.

per cent.<sup>1</sup> Hence, the per cent. of promotion in the 1A grade, when all 1A pupils in over-size classes are excluded, was 1.38 per cent. higher than the per cent. of promotion for the grade as a whole.

Assuming that all other conditions affecting promotion and non-promotion were the same in classes of fifty and under, and in over-size classes, the per cent. of promotion in the 1A grade was, therefore, lower by 1.38 per cent. than it otherwise would have been, because of 1A pupils in over-size classes. Hence, it appears that over-size classes are a slight factor in causing the low rate of promotion in the 1A grade.

#### (d) Part-Time as a Factor

According to the reports made to us, the per cent. of promotion in the 1A grade, when all 1A pupils in part-time classes are excluded, was 76.96 per cent.<sup>2</sup> which is but .94 of 1 per cent. higher than the per cent. of promotion (76.02 per cent.) for the grade as a whole.

Consequently, had there been 1A whole-time classes only, the per cent. of promotion in the 1A grade as a whole would have been 76.96 per cent. Assuming that all other conditions affecting promotion and non-promotion were the same in the two kinds of classes, the per cent. of promotion in the 1A grade was, therefore, lower by but .94 of 1 per cent. because of 1A pupils in part-time classes.<sup>3</sup>

#### (e) Absence as a Factor

In the reports made to us it is impossible to distinguish between absence due to irregular attendance and absence due to late entrance during the course of the term, the reports giving merely the days absent.

Table IV gives the number of 1A pupils on register at the end of the February-June term, 1911, absent ten days and less, absent eleven to twenty, etc.; it gives the per cent. of the total register of 1A pupils absent ten days and less, absent eleven to twenty days, etc., and the per cent. of the pupils absent ten days and less, absent eleven to twenty days, etc., promoted and the per cent. not promoted:

Table IV<sup>4</sup>

	Absent 10 Days and Less	Absent 11 to 20 Days	Absent 21 to 30 Days	Absent 31 to 40 Days	Absent 41 Days and Above
Number . . . . .	17,215	8,708	5,010	3,188	8,891
Per Cent. of Total Register of 1A Pupils . . . . .	40.02	20.25	11.65	7.41	20.67
Per Cent. Promoted . . . . .	89.47	85.75	79.02	71.01	40.56
Per Cent. Not Promoted . . . .	10.53	14.25	20.98	28.99	59.44

<sup>1</sup> See Table XVII, p. 608.

<sup>2</sup> See Table XXXII, p. 642.

<sup>3</sup> See note, p. 564.

<sup>4</sup> These data were compiled from Table XVIII, p. 612, and from Table XX, p. 614.

11.65 per cent. of 1A pupils were absent, it will be observed, more than a month—that is, more than a fifth of the term; 7.41 per cent. were out of school a month and a half, and 20.67 per cent. were out more than forty-one days, or one 1A pupil out of each five was absent more than two-fifths of the entire time.

The rate of promotion, it will be noted, varies inversely with the increase in the days absent. For pupils absent ten days and less the rate of promotion was 89.47 per cent.; for those absent forty-one days and more, 40.56 per cent. Further, the rate of promotion for pupils absent ten days and less (89.47 per cent.) is higher than the rate for the grade as a whole (76.02 per cent.) by 13.45 per cent. Consequently, had all other conditions been the same as among pupils absent ten days and less, and had there been in the 1A grade pupils absent ten days and less only, the per cent. of promotion for the grade, as a whole, would have been 89.47 per cent. The rate of promotion in the 1A grade was, therefore, lower by 13.45 per cent. than it otherwise would have been, because of pupils who were absent more than ten days.<sup>1</sup>

#### (f) Summary

The foregoing discussion of the assigned causes of the low rate of promotion in the 1A grade may be thus summarized: The per cent. of promotion in the 1A grade, at the end of the February-June term, 1911, was lower than it otherwise would have been by 1.54 per cent., because of the pupils who were unable to use the English language; by 1.38 per cent., because of pupils being in over-size classes, and by .94 of 1 per cent., because of pupils being in part-time classes, and by 13.45 per cent., because of absence. Immaturity was a negligible factor. It is, therefore, clear that absence (including late entrance) was the preponderating cause of the low rate of promotion in the 1A grade at the end of the February-June term, 1911.

#### (2) Increasing the Rate of Promotion in the 1A Grade

The problem of increasing the per cent. of promotion in the 1A grade is, therefore, not so much a question of increasing the number of special classes for pupils unable to use the English language, of reducing the number of over-size classes, and of part-time classes—all of which should be done—as it is a question of getting 1A pupils in school at the beginning of the term and of keeping them there during the term. Hence, the problem of increasing the per cent. of promotion in the 1A grade is chiefly one of how to improve attendance among 1A pupils.

It is to be expected that 1A pupils will attend school somewhat less regularly than pupils in other grades. Many parents do not feel the need of keeping such young children in school regularly, the children

<sup>1</sup> See note, p. 564.

themselves, not having as yet formed the school-going habit, are, at times, inclined to remain home when there is no good reason why they should. Infectious and contagious diseases are also more prevalent among 1A pupils than among pupils of the other grades. Granting all this, there is little doubt but that the amount of absence in the 1A grade can be materially reduced.

To be sure, large numbers of 1A pupils are under seven years of age, and are, therefore, not amenable to the Compulsory Education Law. Indeed, of the 83,766 pupils admitted to the 1A grade during the school year 1910-11, 65,682,<sup>1</sup> or 78 per cent., were under seven years of age. With these all that can be done is for the Board of Education to pass rules and regulations controlling their entrance and attendance, and for principals and teachers to use, to the utmost, their influence with parents and pupils. (See recommendations.)

There were, however, among the 1A entries during the school year 1910-11, 18,084<sup>1</sup> pupils, or 22 per cent. of the total 1A entries, who were seven years of age and older. Teachers and principals should not only use their influence with the parents to send these pupils to school at the beginning of the term, but every effort should be put forth to keep them regular in attendance. Further, parents having children seven years of age and older, who do not send them to school at the beginning of the term and keep them regularly in school, should be made to feel the full force of the Compulsory Education Law. It is safe to say that to enforce rigorously the Compulsory Education Law in the 1A grade would not only avoid much future trouble with parents, but cure many an incipient case of truancy.

### (3) Recommendations

To the end that attendance in the 1A grade may be improved, and that congestion in this grade may be relieved, we recommend:

(a) That a by-law be passed by the Board of Education which prohibits entrance, to the 1A grade, after the last day of the fourth week of a school term, to children who will not be seven years old until after the end of the term; and which provides for the exclusion from the school, at the discretion of the principal, of such children when they have been absent forty days, including days lost by late entrance and irregular attendance, during the first half of the term.

(b) That effort be made by the Board of Education to have the Compulsory Education Law so amended that it will apply to children who will be seven years old before the end of a given school term.

(c) That the Permanent Census Board, prior to the beginning of each school term, send to the principal of each school, along with the

<sup>1</sup> Annual Report of City Superintendent of Schools, 1910-11. Table XXXIII, p. 61.

name and home address of the parent, the names, for the given school district (a), of all children six years of age who will not be seven until after the close of the given term; (b) of all children who are six and who will be seven before the end of the given term, and (c) of all children seven years of age, who should enter school at the opening of the given term. In this way each principal will know the number of children that should enter his or her school, and will be able to report at an early date to the attendance officers all children who have not entered and who are subject to the Compulsory Education Law.

(d) That a poster in the several languages of the city be prepared and placed in the several school districts prior to the beginning of each term, which will emphasize the importance of sending children to school at the beginning of the term, and of keeping them regular in attendance, which will state the rules regarding the entrance and attendance of children who will not be seven until after the end of the term, and which will point out the provisions of the Compulsory Education Law.

(e) That a new attendance report be prepared for the 1A grade, which will show for each child the date of entrance, the number of days in attendance during the month, and the cause of each absence, and that a separate report be made for children not amenable to the Compulsory Education Law and for children amenable to it, to the end that definite information may be had on absence in the 1A grade, and on the extent to which the Compulsory Education Law is enforced.

#### 4. "Forced Promotions"

##### (1) Assertion of Teachers and Principals

With the exception of the 1A and the 8B grades, the rate of promotion, both in the several boroughs and in the Greater City, was, at the end of the February-June term, 1911, as we have seen, uniformly about 90 per cent. The fact that the rate of promotion was uniformly about 90 per cent. gives weight to the statement made to us repeatedly, both by teachers and principals, that they were "unofficially expected" to promote at the end of the February-June term, 1911, approximately 90 per cent. of their pupils, and, hence, that promotions were forced and were made mechanically and without due regard to fitness.

The City Superintendent of Schools did urge upon principals, during the school year 1910-11, the importance of advancing a large per cent. of pupils. To quote his words: "I have been careful to advise the principals that the *pressure to secure more generous promotions* must not be construed to mean that pupils who are unfitted to do the work of the next higher grade are to be promoted. It means only that every effort is to be made to render every pupil fit for promotion."<sup>1</sup>

Despite the foregoing uniformity in the per cent. of promotion, and

<sup>1</sup> Annual Report of the City Superintendent of Schools for 1910-11, p. 83.

the assertion of teachers and principals, referred to above, there is evidence that, on the whole, principals and teachers used discretion in making promotions at the end of the February-June term, 1911, and that promotions were not made on a mere numerical and mechanical basis, as follows:

## (2) Variation in Rate of Promotion

(a) *With Absence, Over-Age, etc.*—Of the pupils on register June 30, 1911, the rate of promotion for those absent ten days and less was 93.16 per cent.; for those absent forty-one days and above, 52.82 per cent.<sup>1</sup> Of the pupils of normal age for their grade, 90.84 per cent. were advanced, but this was the case with only 78.65 per cent. of those three years and more over normal.<sup>2</sup> For pupils able to use the English language on entrance to the grade the per cent. of promotion was 88.99 per cent.; for those unable to use our language, 65.05 per cent.<sup>3</sup> In all grades, with the exception of the 4A, 4B, and 6B, the rate of promotion for pupils in whole-time classes was higher than for pupils in part-time classes.<sup>4</sup> All of which tends to show that the children receiving promotion were those experience would indicate were the best entitled to promotion.

(b) *In Different Schools.*—That discretion was used in making promotions is also shown by the variations in the rate of total promotions in different schools.

One school was selected, by chance, from each of the forty-six districts in the Greater City, and two schools from five of the largest districts, making a total of fifty-one. The per cent. of total promotion, at the end of the February-June term, 1911, varied in these fifty-one schools from 80 per cent. to 98 per cent. These schools group themselves, when distributed according to per cent. of total promotion, as follows:

Table V

Per Cent. of Promotion in All Grades	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in All Grades	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in All Grades	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in All Grades	Number of Schools Promoting This Per Cent.
80	1	85	1	89	5	93	4
81	2	86	7	90	6	94	3
82	3	87	4	91	3	98	1
83	3	88	1	92	7	..	..

<sup>1</sup> See Table XX, p. 614.

<sup>2</sup> See Table XXV, p. 624; also table p. 626.

<sup>3</sup> See Table XXIX, p. 633.

<sup>4</sup> See Table XXXVI, p. 649.



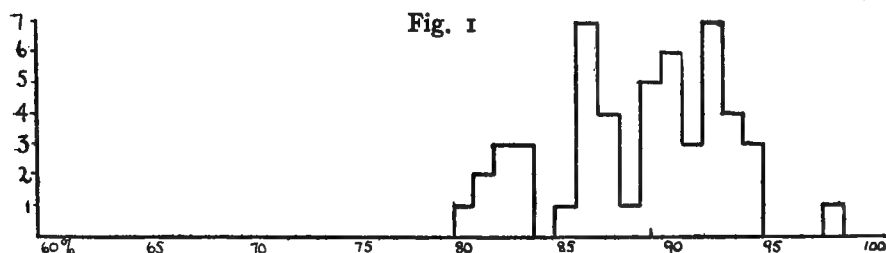


Fig. 1 is a graphic representation of the data in Table V. The rate of promotion is represented on the horizontal scale and the number of schools on the vertical scale. The median rate of promotion is indicated by the short vertical line on the horizontal scale.<sup>1</sup>

(c) *In Same Grade of Different Schools.*—The rate of promotion at the end of the February-June term, 1911, varied, also, in the different schools in the same grade. For example, the rate of promotion in the 8A grade of the foregoing fifty-one schools ranged from 60 per cent. to 100 per cent. These schools group themselves, when distributed according to the per cent. of promotion in the 8A grade, as follows:

Table VI

Per Cent. of Promotion in 8A Grade	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in 8A Grade	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in 8A Grade	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in 8A Grade	Number of Schools Promoting This Per Cent.
60	1	83	1	90	2	96	2
76	1	84	1	91	3	97	3
78	1	85	2	93	7	100	6
81	2	88	4	94	4	..	..
82	3	89	4	95	4	..	..

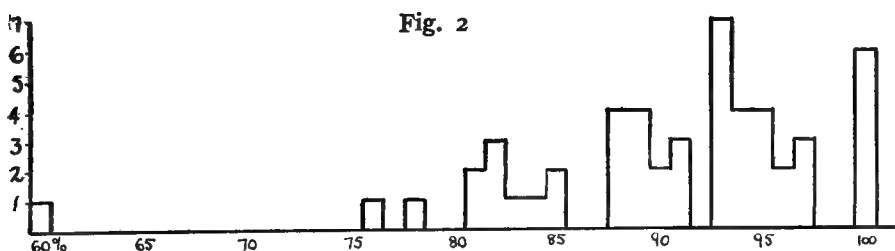


Fig. 2 is a graphic representation of the data in Table VI. The rate of promotion is represented on the horizontal scale and the number of schools on the vertical scale. The median rate of promotion is indicated by the short vertical line on the horizontal scale.

<sup>1</sup> The median rate of promotion for a group of schools is the rate of promotion, which is lower than the rate in approximately one-half and higher than the rate in approximately the other half of the schools of the group.

In the 5A grade the rate of promotion ranged from 75 per cent. to 100 per cent., and the schools group themselves, when distributed according to the per cent. of promotion in this grade, as follows:

Table VII

Per Cent. of Promotion in 5A Grade	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in 5A Grade	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in 5A Grade	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in 5A Grade	Number of Schools Promoting This Per Cent.
75	1	84	2	90	4	95	2
80	3	86	2	91	4	96	2
81	2	87	3	92	6	97	2
82	1	88	1	93	5	100	2
83	5	89	3	94	1	...	..

Fig. 3

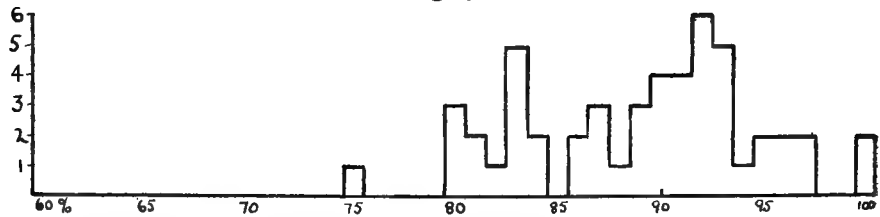


Fig. 3 is a graphic representation of the data in Table VII. The rate of promotion is represented on the horizontal scale and the number of schools on the vertical scale. The median rate of promotion is indicated by the short vertical line on the horizontal scale.

In the 1A grade the rate of promotion varied from 57 per cent. to 99 per cent., and the schools group themselves, when distributed according to the per cent. of promotion in this grade, as follows:

Table VIII

Per Cent. of Promotion in 1A Grade	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in 1A Grade	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in 1A Grade	Number of Schools Promoting This Per Cent.	Per Cent. of Promotion in 1A Grade	Number of Schools Promoting This Per Cent.
57	1	74	1	81	5	91	1
64	1	75	4	82	1	94	1
65	2	76	2	83	3	97	1
67	1	77	4	84	2	98	1
68	5	78	3	85	1	99	1
70	2	79	1	88	1	..	..
72	3	80	1	90	2	..	..

Fig. 4

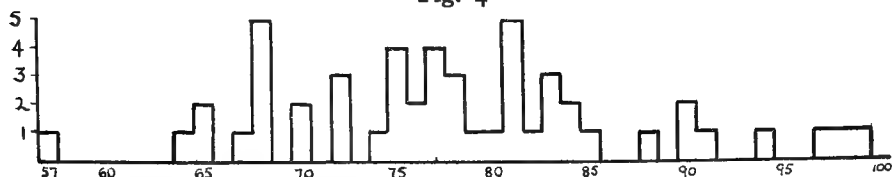


Fig. 4 is a graphic representation of the data in Table VIII. The rate of promotion is represented on the horizontal scale and the number of schools on the vertical scale. The median rate of promotion is indicated by the short vertical line on the horizontal scale.

(d) *In Different Grades of the Same School.*—Finally, the rate of promotion, at the end of the February-June term, 1911, varied from grade to grade in the same school. This is shown by Fig. 5. Fig 5 represents the variations from grade to grade in the per cent. of promotion in the school, of the fifty-one selected by chance, having the highest per cent. of total promotion, in the school having the lowest per cent. of total promotion, and in the school having the median rate of total promotion.

Fig. 5

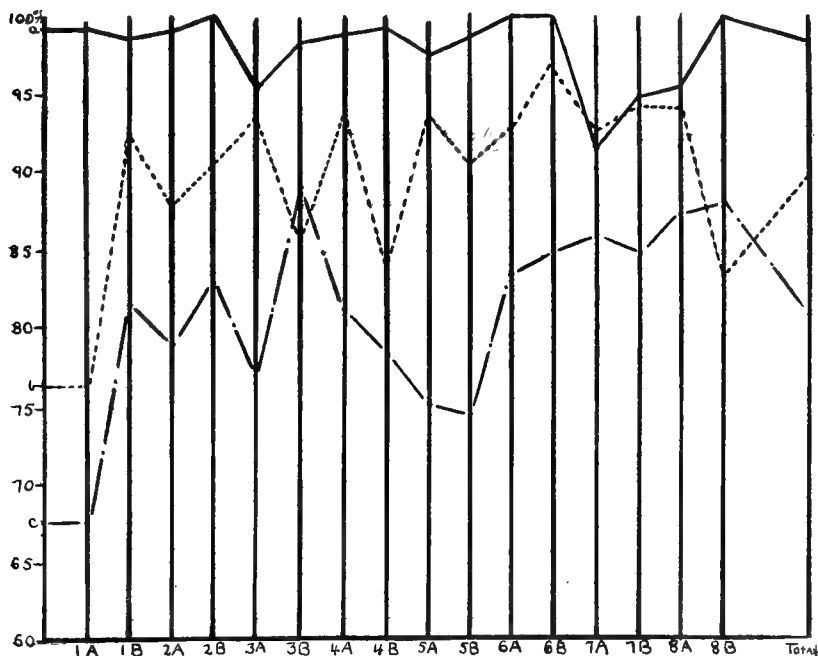


Fig. 5. a—School having highest rate of total promotion.  
 b—School having median rate of total promotion.  
 c—School having lowest rate of total promotion.

### 3) Conclusions

Such variations as the foregoing in the rate of promotion would not occur had promotions been made on a mere mechanical basis. Indeed, the very presence of such variations indicates, despite the uniformity in the rate of total promotion in the several grades in the different boroughs and in the Greater City, that judgment was exercised in the making of promotions at the end of the February-June term, 1911, and, hence, that, on the whole, the children promoted were the pupils who should have been advanced.

### 5. Increase in the Rate of Promotion

To affirm that promotions at the end of the February-June term, 1911, were not made mechanically is not to deny that there was a decided increase in the rate of promotion over corresponding terms of previous years.

#### (1) Increase in Rate of Promotion

Table IX gives, by grades, the rate of promotion for the entire February-June term, 1910 (including promotions made during the term and at the end of the term), the rate of promotion for the entire February-June term, 1911, and the increase in the rate of promotion for the entire February-June term, 1911, over the rate for the same term, 1910:

Table IX

Grades	Rate of Promotion for Entire Feb.-June Term		Increase in the Rate of Promotion for the Entire Feb.-June Term, 1911, Over the Rate for the Same Term of 1910
	1910	1911	
1A	73.61	78.80	5.19
1B	86.77	90.77	4.00
2A	87.82	91.38	3.56
2B	88.18	92.79	4.61
3A	87.97	92.23	4.26
3B	88.42	92.89	4.47
4A	87.62	91.99	4.37
4B	87.72	92.07	4.35
5A	85.84	91.55	5.71
5B	86.12	92.37	6.25
6A	85.65	91.32	5.67
6B	89.78	91.22	1.44
7A	85.77	89.62	3.85
7B	85.99	91.35	5.36
8A	86.89	91.79	4.90
8B	91.05	94.98	3.93
Total.....	86.30	90.86	4.56

The figures for this table are exclusive of special classes and were computed from Table LII, page 92, Annual Report of the City Superintendent of Schools for 1909-10, and for 1910-11, Table XXXVII, page 66.

The rate of promotion for the entire February-June term of 1911 was higher in every grade than for the corresponding term of 1910. It was higher by 1.44 per cent. in one grade, by from 3.56 per cent. to 3.93 per cent. in three grades, by 4 per cent. to 4.90 per cent. in seven grades, by from 5.19 per cent. to 5.71 per cent. in four grades, and by 6.25 per cent. in one grade. It will also be observed that the rate of total promotion was higher for the entire February-June term, 1911, by 4.56 per cent., than for the same term of 1910.

An increase of 4.56 per cent. in the rate of promotion, in a single year, is an unusually large increase for the City of New York. Table X gives by grades the rate of promotion for the entire February-June term of 1906, 1907, 1908, 1909, 1910, and 1911; the increase in the rate of promotion for the entire February-June term, 1910, over the rate for the entire February-June term, 1906; also the increase in the rate of promotion for the entire February-June term, 1911, over the same term, 1910, and, finally, it gives the difference between the increase in the rate of promotion for the entire February-June term of 1911 over the same term of 1910, and the increase for the entire February-June term of 1910 over the same term of 1906.

Table X<sup>1</sup>

Grades	Rate of Promotion for Entire Feb.-June Term						Increase in Rate of Promotion For		Difference in Rate of Promotion Between the Entire Feb.-June Term, 1911, Over Same Term, 1910 and the Entire Feb.-June Term, 1910, Over 1906.
	1906	1907	1908	1909	1910	1911	Entire Feb.-June Term, 1910, Over Same Term, 1906	Entire Feb.-June Term, 1911, Over Same Term, 1910	
1A	68.51	65.49	69.60	71.74	73.61	78.80	5.10	5.19	.09
1B	85.19	82.28	85.26	86.24	86.77	90.77	1.58	4.00	2.42
2A	83.56	82.00	85.98	86.76	87.82	91.38	4.26	3.56	-.70
2B	85.04	83.65	86.50	87.42	88.18	92.79	3.14	4.61	1.47
3A	84.12	81.94	85.73	86.50	87.97	92.23	3.85	4.26	.41
3B	85.85	83.81	86.75	88.07	88.42	92.89	2.57	4.47	1.90
4A	84.38	82.91	85.78	85.94	87.62	91.99	3.24	4.37	1.13
4B	84.62	81.88	85.50	86.58	87.72	92.07	3.10	4.35	1.25
5A	82.93	80.43	83.15	84.62	85.84	91.55	2.91	5.71	2.80
5B	82.75	80.91	83.59	85.01	86.12	92.37	3.37	6.25	2.88
6A	82.85	81.46	83.33	84.12	85.65	91.32	2.80	5.67	2.87
6B	83.11	81.52	85.06	84.69	89.78	91.22	6.67	1.44	-5.23
7A	80.37	79.93	81.01	82.75	85.77	89.62	5.40	3.85	-1.55
7B	82.25	80.79	83.60	84.87	85.99	91.35	3.74	5.36	1.62
8A	81.39	81.93	84.37	85.08	86.89	91.79	5.50	4.90	-.60
8B	82.92	86.81	88.12	88.23	91.05	94.98	8.13	3.93	-4.20
Total.....	82.56	80.72	83.78	84.98	86.30	90.86	3.75	4.56	.81

<sup>1</sup>These figures are exclusive of special classes, and were computed from the Annual Report, for the corresponding year, of the City Superintendent of Schools.

There has been, it will be observed, an increase in the rate of promotion in the February-June term, in each of the grades, from 1906 to 1911. The most decided increase was, however, in 1911. So decided was this that the increase in 1911 over 1910 was greater, in eleven of the sixteen grades, than the increase in these grades for the five years prior to 1911. While the increase for 1910, in the rate of promotion, in all grades taken together, over 1906 was, it will be noted, 3.75 per cent., the increase in the rate of total promotion in 1911 over 1910 was 4.56 per cent. Hence, the increase in total promotion for the entire February-June term was .81 of 1 per cent. greater for the single February-June term, 1911, than for the five terms prior to 1911.

This extraordinary increase in the rate of promotion for the entire February-June term, 1911, may have been due either to an increase in promotions during the term, or to an increase at the end of the term, or it may have been due to both an increase during the term and at the end of the term. Table XI gives, by grades, for the February-June term, 1910, the rate of promotion during the term, and the rate at the end of the term; also the same facts for the February-June term, 1911. It shows, besides, the increase in the rate of promotion during the February-June term, 1911, over the rate during the same term, 1910; also the increase in the rate of promotion at the end of the February-June term, 1911, over the rate at the end of the same term, 1910:

Table XI<sup>1</sup>

Grades	Feb.-June Term, 1910		Feb.-June Term, 1911		Increase in Rate of Promotion Feb.-June Term, 1911, Over Feb.-June Term, 1910	
	Rate of Promotion During Term	Rate of Promotion at End of Term	Rate of Promotion During Term	Rate of Promotion at End of Term	Increase During Term	Increase at End of Term
1A	2.42	71.19	3.04	75.76	.62	4.57
1B	1.64	85.13	2.60	88.16	.96	3.03
2A	2.21	85.60	2.66	88.73	.45	3.13
2B	1.93	86.26	2.60	90.19	.67	3.93
3A	2.28	85.69	2.78	89.45	.50	3.76
3B	1.56	86.87	2.45	90.44	.89	3.57
4A	1.86	85.76	2.41	89.58	.55	3.82
4B	1.52	86.20	2.23	89.83	.71	3.63
5A	1.99	83.85	2.75	88.80	.76	4.95
5B	1.75	84.37	2.63	89.74	.88	5.37
6A	1.98	83.67	2.44	88.88	.46	5.21
6B	1.71	88.07	1.77	89.45	.06	1.38
7A	3.55	82.22	2.03	87.59	-1.52	5.37
7B	2.03	83.96	2.31	89.05	.28	5.09
8A	2.00	84.88	2.30	89.49	.30	4.61
8B	0.005	91.04	.71	94.28	.705	3.24
Total.....	1.93	84.37	2.44	88.42	.51	4.05

<sup>1</sup> These figures are exclusive of special classes and were computed from the Annual Report of the City Superintendent of Schools for 1910, Table LII, page 92, and for 1911, Table XXXVII, page 66.

There was an increase in the rate of promotion during the February-June term, 1911, over the rate during the same term, 1910, in all grades, except the 7A, where there was a decrease of 1.52 per cent. The rate during the term was higher by from .06 of 1 per cent. to .28 of 1 per cent. in two grades, by from .30 of 1 per cent. to .50 of 1 per cent. in four grades, by from .55 of 1 per cent. to .75 of 1 per cent. in six grades, and by from .88 of 1 per cent. to .96 of 1 per cent. in three grades—while the increase in all grades, taken together, was .51 of 1 per cent.

It will also be observed that there was an increase, in all grades, in the rate of promotion at the end of the February-June term, 1911, over the rate at the end of the same term, 1910. The rate was higher by 1.38 per cent. in one grade, by from 3.03 per cent. to 3.93 per cent. in eight grades, by from 4.57 per cent. to 4.95 per cent. in three grades, and by from 5.09 per cent. to 5.37 per cent. in four grades, while the increase in all grades, taken together, was 4.05 per cent.

Of the 4.56 per cent. increase in the rate of promotions for the entire February-June term, 1911, over the rate for the entire February-June term, 1910, .51 of 1 per cent., or 11.18 per cent., of this increase was, therefore, due to the larger number of promotions during the term, and 4.05 per cent. or 88.82 per cent. of the increase was due to the larger number of promotions at the end of the term.

The fact that the increase in the rate of total promotions for the entire February-June term, 1911, over 1910, was greater than the total increase for the same term from 1906 to 1910, inclusive, and the fact that 88.82 per cent. of the extraordinary increase in the rate of total promotions for the entire February-June term, 1911, was due to the increased number of promotions at the end of the term, raises the question: how was this extraordinary increase in the rate of promotion effected? A part of it was, doubtless, brought about through an increase in the efficiency of the school. The importance of making more liberal promotions having been emphasized, teachers and principals put forth unusual effort to fit pupils for advancement. Yet, when due allowance is made for whatever increase in efficiency there may have been, it must be admitted, by all who are acquainted with school conditions and school work, that the extraordinary increase in the rate of promotion in the February-June term, 1911, was due, in most part, to the "pressure" exercised by the City Superintendent of Schools "to secure more generous promotion."

## (2) Increase Justified

The important question, therefore, is: Was the City Superintendent of Schools justified in using "pressure to secure more generous promotions"? In view of the number of over-age pupils, and of the amount of elimination in the elementary schools of the City of New York, we believe the City Superintendent was justified in his endeavor to increase the rate of promotion.

(a) *Number of Over-Age Pupils.*—The course of study in the elementary schools of the City of New York comprises sixteen units, each in theory, one-half school year in length. Accordingly, a child, entering school at six or seven, should complete the elementary school by his fourteenth or fifteenth year. If, for any reason, a pupil enters school late or remains a whole year or more in a single grade, such a child becomes over-age for his grade.

Table XII gives the register in regular classes, after promotion June 30, 1911, in the grades of each year, the number of pupils in the grades of each year and among the elementary school graduates of 1910-11, under normal age, normal age, under one year over normal, etc.; it shows, besides, the total number of over-age pupils in the grades of each year and among the elementary school graduates; also the per cent. of the register of each grade and the per cent. of the graduates over-age:



Table XII

	First Year Grades	Second Year Grades	Third Year Grades	Fourth Year Grades	Fifth Year Grades	Sixth Year Grades	Seventh Year Grades	Eighth Year Grades	Total All Grades	Elementary School Graduates
Register in Regular Classes										
After Promotion, June 30, 1911.....	64,057	87,048	84,650	81,121	75,819	69,236	59,363	44,504	565,798	35,329
Under Normal Age.....	6,276	12,385	10,050	9,010	6,862	6,365	6,302	5,668	62,918	7,946
Normal Age.....	52,679	63,294	57,366	49,958	44,980	39,029	35,137	28,579	371,022	13,206
Less Than One Year Over-Age.....	3,639	7,213	10,141	12,260	12,639	14,168	12,291	7,670	80,021	9,708
Between One and Two Years Over-Age.....	947	2,580	4,365	5,706	7,096	6,927	4,620	2,147	34,388	3,862
Between Two and Three Years Over-Age.....	292	991	1,635	2,745	3,004	2,365	878	389	12,299	802
Three and More Years Over-Age.....	224	585	1,093	1,442	1,238	382	135	51	5,150	105
Total Number of Over-Age Pupils.....	5,102	11,369	17,234	22,153	23,977	23,842	17,924	10,257	131,858	14,477
Per Cent. of Register Over-Age.....	7.96	13.06	20.36	27.31	31.62	34.44	30.19	23.05	23.30	40.98

The data for this table were computed from Tables XXVIII and XXXV, pp. 54 and 63 of the Annual Report of the City Superintendent of Schools for 1910-11. The table merely puts in different form the report on the ages of pupils in regular classes of the City Superintendent of Schools for 1911, hence gives the number of over-age pupils when determined by the age-grade standards as fixed by the City Superintendent.

Of the 35,329 graduates in 1910-11, it will be observed that 14,477, or 40.98 per cent., were over-age, hence were fifteen years of age and older on completing the elementary school. Despite the fact that the foregoing table has to do only with pupils in regular classes, and, despite the fact that age is judged from the point of view of the age limits fixed for being in the grade in which pupils are registered after promotion, there were in the regular classes of all grades, June 30, 1911, according to the City Superintendent of Schools, 131,858 over-age pupils, or 23.30 per cent. of the pupils on register after promotion were behind their grade for their age. The grades of the sixth year show the highest per cent. of over-age, 34.44 per cent., and the grades of the first year, the lowest, 7.96 per cent.

Fig. 6

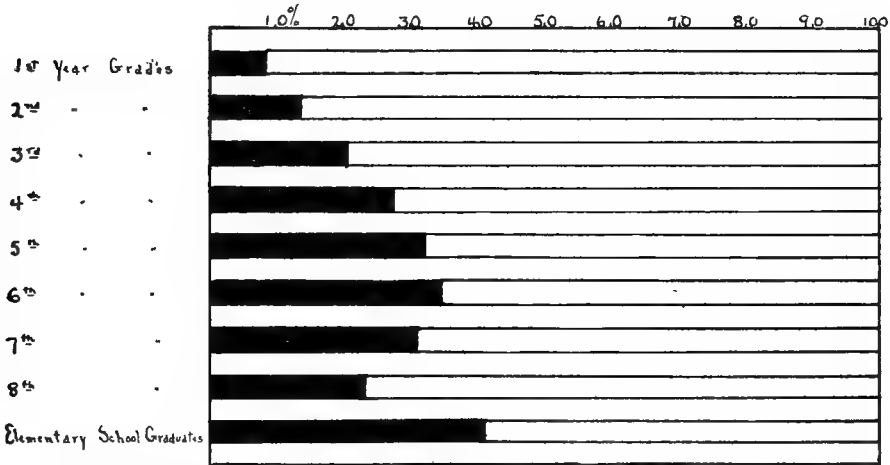


Fig. 6. Black indicates per cent. of over-age pupils in the grades of each year and the per cent. of over-age pupils among the graduates of 1910-11, as reported by the City Superintendent of Schools.

Were the foregoing over-age pupils registered in the grade where they should be by reason of their age, these pupils would have been distributed, when distributed according to the age-grade standards as fixed by the City Superintendent of Schools, among the several grades as follows:

Total No. Over-Age Pupils	Present Grade	Grades in Which These Over-Age Pupils in Each Grade Should be Registered by Reason of Their Age; Also the Number That Would be in Each Grade											
		Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	H. S. First Year	H. S. Second Year	H. S. Third Year	H. S. Fourth Year	College First Year
5,102	First Year.....	3,639	947	292	120	59	45	93	.....	.....	.....	.....	.....
11,369	Second Year.....	.....	7,213	2,580	991	351	141	286	102	.....	.....	.....	.....
17,234	Third Year.....	.....	.....	10,141	4,365	1,635	705	1,041	350	51	.....	.....	.....
22,153	Fourth Year.....	.....	.....	.....	12,260	5,706	2,745	3,004	1,088	150	.....	.....	.....
23,977	Fifth Year.....	.....	.....	.....	.....	12,639	7,096	6,927	2,365	342	40	.....	.....
23,842	Sixth Year.....	.....	.....	.....	.....	.....	14,168	12,291	4,620	878	122	13	.....
17,924	Seventh Year.....	.....	.....	.....	.....	.....	.....	.....	7,670	2,147	389	44	7
10,257	Eighth Year.....	.....	.....	.....	.....	.....	.....	.....	9,708	3,862	802	86	19
14,477	El. School Graduates.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

There are thousands of pupils in each grade, it will be noted, who are below the grade in which their age entitles them to be. There are pupils in the second grade who, by reason of their age, should be in the eighth grade; pupils in the third, who should be in the high school; and pupils graduating from the elementary school, who should be in college. In the sixth and lower grades alone there are 15,839 pupils who are already fourteen years of age; in the seventh grade, 17,924, and in the eighth grade, 24,597, or a total of 58,360 pupils who instead of dragging along between the first and eighth grades should have their elementary education behind them and be either at work or in high school.

The educational significance of over-age lies in the fact that just to the degree that pupils in the elementary school are over-age, just to that degree do they—particularly those over-age because they have failed to receive promotion regularly, tend to fail to complete the elementary school course of study.<sup>1</sup> Hence, of the pupils on register in regular classes June 30, 1911, 34,388, by reason of being over-age between one and two years, will probably fail to complete the work of the eighth year; 12,299, by reason of being behind between two and three years, will probably fail to complete the work of the seventh year; and 5,151, by reason of being behind three and more years, will probably fail to complete the grades of the sixth year.

A certain amount of over-age in the elementary schools of the city is due to the late entrance of children to the grades of the first year; the major portion of it is, however, due to pupils failing to receive regular promotion after they have once entered school.<sup>2</sup> This fact in itself supplies ample ground for the insistence of the City Superintendent on "more generous promotions."

(b) *Amount of Elimination.*—The dropping out of pupils from the elementary schools before completing the course of study is termed elimination. It is doubtful whether any large city of this country has, at present, the data at hand to determine with exactness the grades of work completed by the children leaving the elementary school. At all events, such data are not to be had at present in the City of New York.<sup>3</sup>

Following the method pursued by writers on elimination, the per cent. of pupils entering school who continue to the end of each year is estimated by finding what per cent. the pupils in a given grade at the end of a given school year before promotion are of the number of pupils that should be in the grade in view of the first-year beginners for the given school year.

<sup>1</sup> See this report, p. 626.

<sup>2</sup> See Table XXXIII, p. 61, Annual Report of the City Superintendent of Schools, 1910-11, and Table I, p. 560, of this report.

<sup>3</sup> The pupils' Record Cards, adopted in 1909, will in the near future supply these data.

Proceeding in this way,<sup>1</sup> we estimate that, of the pupils entering the elementary schools of the City of New York, the per cent. remaining to the end of each year and the per cent. completing the final grade are as follows:

	Per Cent. Remain- ing to the End of the Year	Per Cent. Drop- ping Out Before the End of Year
First Year.....	108.66	.....
Second ".....	100.73	.....
Third ".....	99.47	.....
Fourth ".....	98.57	.....
Fifth ".....	96.69	3.31
Sixth ".....	88.71	11.29
Seventh ".....	61.45	38.55
Eighth ".....	47.57	52.43
Completing Eighth Grade.....	41.33	58.67

It would appear from the foregoing estimates that, of the children entering the elementary schools of the City of New York, practically all remain to the end of the grades of the fifth year, that one pupil out of each eight leaves before the end of the sixth year, four out of each ten fail to remain to the end of the seventh year, less than one in two continues to the end of the eighth year, and but four out of each ten graduate.

Fig. 7

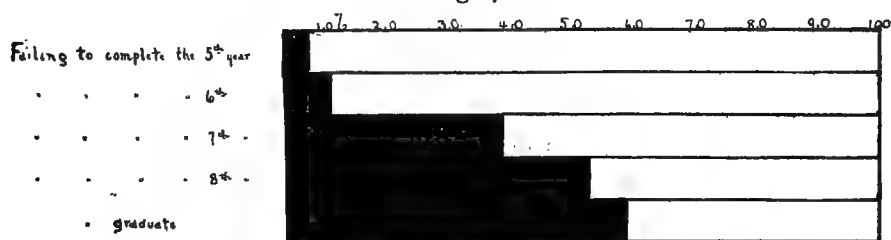


Fig. 7. Black indicates the per cent. of pupils failing to complete the grades of the fifth, sixth, seventh, and eighth years, and the per cent. failing to graduate.

All other conditions remaining the same, the number of grades a pupil is able to complete during the course of his school life is condi-

<sup>1</sup>In making this estimate the average of the first-year beginners for 1908-9, 1909-10, and 1910-11 was used as the base. See Annual Report of City Superintendent of Schools, 1909, p. 72; 1910, Table XLVII, p. 78, and 1911, Table XXXIII, p. 61. For the number of pupils remaining to the end of the grades of each year see Annual Report of the City Superintendent of Schools, 1911, Table XXXVII, p. 66. The pupils on register June 30, 1911, in special classes were arbitrarily distributed as follows: One-sixteenth to the grades of the second year; one-sixteenth to the grades of the third year; three-sixteenths to the grades of the fourth year; five-sixteenths to the grades of the fifth year, and six-sixteenths to the grades of the sixth year.

tioned by standards of promotion. The practical problem confronting the City Superintendent of Schools was, therefore: Is it better for the children of the city to spend their entire time in school in the sixth and lower grades, or would it be better to make the standards of promotion such that pupils in larger numbers may have opportunity to profit by the work of the seventh and eighth grades? The work in the sixth and lower grades is confined primarily to the school arts—reading, spelling, writing, and the fundamentals of arithmetic—and the work of the two higher grades primarily to the giving of information about our industrial, political, and social life which makes for economic insight and personal ideals, hence there can be but one answer to the foregoing question, viz., that it is preferable to make the standards of promotion such that pupils in larger numbers may enjoy the advantages of the work of the seventh and eighth grades.

### (3) Increase in the Rate of Promotion and Forced Promotions

While the City Superintendent of Schools was, therefore, justified, in his endeavor to increase the rate of promotion, and while principals and teachers used discretion in making promotions, the fact remains that principals and teachers feel that promotions at the end of the February-June term, 1911, were "forced."<sup>1</sup>

No changes were made during this term in the requirements of the elementary school course of study either in the quality of instruction or in the quantity of the subject matter to be taught. Yet teachers and principals felt constrained to promote more than the usual number of pupils. Teachers and principals were thus placed in a false position—that is, they felt under the necessity of promoting pupils who, when judged by official standards, were not fit for promotion. It is safe to say that many such pupils were promoted, and this accounts not only for the feeling that promotions were "forced," but also for a large part of the extraordinary increase in promotions in the February-June term, 1911, over the corresponding term of 1910.

Teachers and principals should not be put in the position of having to promote pupils who, when judged by official standards, are not prepared for promotion. If the City Superintendent of Schools was convinced that it was desirable to increase the rate of promotion, it was incumbent upon him so to lessen the requirements of the elementary school course of study as to quantity that more pupils could meet its requirements and hence be legitimately promoted in greater numbers.

## 6. Conditions Favorable to a Maximum Rate of Promotion

The extraordinary increase in the rate of promotion in the elementary schools for the February-June term, 1911, and the fact that this increase

<sup>1</sup> As already affirmed, this statement is based on the voluntary testimony of many teachers and principals who expressed themselves freely on the subject.

was brought about not so much through an increase in the efficiency of the school as through the promotion of pupils who in former terms would not have been advanced, raises the question: What should be the maximum rate of promotion?

**(1) The Maximum Rate According to the City Superintendent of Schools**

The City Superintendent of Schools is inclined to believe that 90 per cent. of promotion on register at the end of the term is the maximum rate for the city as a whole. "It seems probable," to quote from his report, "that little further increase in the general rate of promotion can be expected. A remarkable uniformity is shown in all grades, the rate for the year ranging from 90.4 per cent. to 92 per cent., with the exception of the 8B grade, which should be excluded, because here the unusual incentive of graduation and the more selected group from which the graduates are drawn tend to raise the 8B rate of promotion above what may be normally expected in the grades below. A difference of only 1.6 per cent. in the rate of promotion in the remaining grades shows so little variability as to indicate a close approach to the probable maximum rate."<sup>1</sup>

That the rate of promotion in the several grades, exclusive of the 8B, was, for the year 1910-11, uniformly about 90 per cent. does not indicate that 90 per cent. should be regarded as the maximum rate of promotion. The same argument would have placed the maximum rate at approximately 81 per cent. in 1907; at 84 per cent. in 1908; at 85 per cent. in 1909; and at 86 per cent. in 1910.<sup>2</sup> Moreover, while the rate of promotion for the year 1910-11 in the several grades is uniform for both the Greater City and the different boroughs, there were variations in the several districts, ranging from 93 per cent. in District 2 to 98 per cent. in District 24;<sup>3</sup> also in the several schools, ranging from 35 per cent. in public school number 25, Richmond, to 110 per cent. in public school number 22, Richmond.<sup>4</sup> Further, the rate of promotion at the end of the term in the regular classes of given grades ranged, for the February-June term, 1911, in different schools, from 60 per cent. to 100 per cent. in the 8A grade, from 75 per cent. to 100 per cent. in the 5A grade, and from 57 per cent. to 99 per cent. in the 1A grade.<sup>5</sup> Such variations in the rate of promotion in different grades, in different schools, and in different districts give little support to the thought that the maximum rate has been attained. Indeed, these variations suggest that, even with prevailing standards, there might be a considerable increase in the rate of promotion.

<sup>1</sup> Annual Report of the City Superintendent of Schools for 1910-11, p. 81.

<sup>2</sup> See Table X, p. 575.

<sup>3</sup> Annual Report of the City Superintendent of Schools for 1910-11, Table XL, pp. 75-77.

<sup>4</sup> Annual Report of the City Superintendent of Schools for 1910-11, appendix "C," p. 471.

<sup>5</sup> See Tables VI, p. 571; VII and VIII, p. 572.

## (2) Conditions Determining Maximum Rate of Promotion

However this may be, the present rate of promotion in no wise indicates what the rate of promotion should be. The rate of promotion in the elementary schools of the city is at present in large part determined by the requirements of its one course of study.

Conditions are favorable to the completion of an elementary school course of study by practically all pupils, hence favorable to a maximum rate of promotion—

(a) When the requirements of the elementary school are adapted to the varying abilities and educational needs of different groups of pupils, and are such that all normal children in regular attendance are able to complete the course of study; hence, when there are as many elementary school courses of study of varying requirements as there are groups of normal children of different abilities and educational needs.

(b) When the total length of each of the different elementary school courses of study is determined (1) by the length of the period pupils may with profit be kept under the régime of the elementary school, and (2) by the length of time pupils may reasonably be expected to be in attendance during this period.

## (3) Disregard of Conditions Favorable to a Maximum Rate of Promotion

These conditions favorable to a maximum rate of promotion have, to a considerable extent, been disregarded in the development and administration of the present elementary school course of study.

(a) *Disregard of the Proper Length of the Elementary School Period.*—The length of the period children can with profit be kept under the régime of the elementary school is determined, on the one hand, by the age at which children may well enter the elementary school, and, on the other, by pubescence. While custom sanctions children entering the elementary school at six, and while children entering at this age probably make on the whole better progress than those entering at any other age,<sup>1</sup> no one actually knows whether the best age of entrance is five, six, seven, or older.<sup>2</sup> In the present state of our knowledge, the best, therefore, that can be done is to follow the custom of admitting children to the elementary school at six, and make six the lower age limit of the elementary school period. This can at least be done until the question of the best age at which to admit children to the elementary schools is determined by experimental investigation.

Pubescence<sup>3</sup> is, as a rule, accompanied by certain physical vigor, mental and emotional development which makes pubescent<sup>3</sup> children sus-

<sup>1</sup> Ayres: "Relation Between Entering Age and Subsequent Progress Among School Children."

<sup>2</sup> See Table XXV, p. 624.

<sup>3</sup> Pubescence denotes a process covering a period of time. Puberty or physiological maturity is the point of time when the ability to procreate is established. A pubescent is an individual who is maturing, and hence in the period of pubescence.



ceptible to different materials of instruction, different methods of teaching, a different kind of discipline, school organization, and life, than are prepubescent children. Hence, there is general agreement that children cannot be kept with profit under the régime of the elementary school much beyond the beginning of pubescence.<sup>1</sup>

The age at which pubescence begins varies among normal children and the length of the period ranges from one to three years. In consequence, in an age group above twelve years of age, there will be pre-pubescent (immature) children; pubescent (maturing) children; and postpubescent (mature) children. The per cent. of immature, maturing, and mature boys in different age groups are shown in Table XIII:

Table XIII

AGE IN YEARS	PHYSIOLOGICAL AGE GROUPS		
	Immature, Per Cent.	Maturing, Per Cent.	Mature, Per Cent.
12.50 to 13.00.....	69	25	6
13.00 " 13.50.....	55	26	18
13.50 " 14.00.....	41	28	31
14.00 " 14.50.....	26	28	46
14.50 " 15.00.....	16	24	60
15.00 " 15.50.....	9	20	70
15.50 " 16.00.....	5	10	85
16.00 " 16.50.....	2	4	93
16.50 " 17.00.....	1	4	95
17.00 " 17.50.....	0	2	98
17.50 " 18.00.....	0	0	100

This table was taken from "Anatomical or Physiological Age," Pedagogical Seminary, June, 1908, an article by C. Ward Crampton, M. D., Supervisor of Physical Training, New York City. This table is based on the records of 4,800 boys in a New York high school.

It appears from Table XIII that no one age can be designated as *the age of the beginning of pubescence*. Dr. Crampton found, however, from a study of 3,835 cases (high school boys) that, "for the ending of prepubescence and the beginning of pubescence, the middle of the mean years is 14.00 years, the average date is 13.44 years, with a variability of, more or less, 1.51 years."<sup>2</sup> No similar data for girls, so far as we know, are available. The average age of puberty (maturity) is, however, well established by Foster, who found the average age to be fourteen for 4,000 American girls.

While there is need of further data pertaining to both boys and girls with respect to the number of prepubescent, pubescent, and postpubescent children in different age groups, there is still greater need for data concerning what time during pubescence there appear the physical vigor

<sup>1</sup> Hall: "Adolescence," Vol. II, Ch. VII.

<sup>2</sup> American Physical Education Review, 1908, p. 146.

and the mental and emotional development which make necessary a change of school methods and régime. Are these concomitant, as a rule, with the beginning, the middle, or the end of the period? The general impression is that they more often appear at the beginning of the period; yet it must be confessed that but little data have been collected on this point.

Making the data at hand the basis of judgment, it appears that children, as a class, cannot, with profit, be kept under the régime of the elementary school much, if any, beyond fourteen. In fixing on fourteen as the upper age limit for the work of the elementary school we do no violence to educational practice, except in a few large cities,<sup>1</sup> and are in accord with the Compulsory Education Laws of New York and of other states; also in accord with a recent declaration of the National Education Association.<sup>2</sup> *Even if fourteen is accepted as the upper age limit for attendance on the elementary school, this age limit should be subjected to an experimental test and raised or lowered according as experience dictates.* Further, the organization and the administration of the school should be made so flexible that children maturing before fourteen may continue their elementary education under conditions other than those ordinarily found in the elementary school,<sup>3</sup> and that children maturing after fourteen may, on completing their elementary education, continue their schooling under conditions other than those generally found in the high school. For neither should the child be kept under the régime of the elementary school after maturity,<sup>4</sup> nor be placed in the high school before maturity;<sup>5</sup> the one is as detrimental as the other. In a word, fourteen may be taken as the upper age limit for the period of elementary education, but each child should be made the subject of consideration; and, so far as possible, the organization and régime of the school should be adapted to the physiological age of each child.

Little regard is paid in New York City to the limits (six to fourteen) of the elementary school period, for thousands of children are subjected to the régime of the elementary school long after their fourteenth birthday. Of the children thirteen to fourteen years old on the register each year, June 30, after promotion, from 1905 to 1908 inclusive, 64.81 per cent. continued in school one additional year; 27.41 per cent. continued two additional years; and 7.95 per cent. continued three and more additional years. (See table below.<sup>6</sup>) In consequence, an ele-

<sup>1</sup> See Strayer: *Age-Grade Census of Schools and Colleges*, United States Bureau of Education, 1911.

<sup>2</sup> Proceedings of the National Education Association, 1911, p. 32.

<sup>3</sup> See Bachman's Report on the Intermediate School, pp. 38-43.

<sup>4</sup> See results of an experiment in a public school of New York City; Crampton, *Journal of Education*, Boston, April 25th and May 2d, 1912.

<sup>5</sup> See results of an experiment in a high school of New York City; Crampton, *The Influence of Physiological Age Upon Scholarship*, Physiological Clinic, June, 1907.

<sup>6</sup> The table on p. 589 shows for each of the years 1905 to 1908, inclusive, the number of children on register June 30th, after promotion, thirteen to fourteen; the number one year later, fourteen to fifteen; the number two years later, fifteen to sixteen, and the number three years later, sixteen and over; also the total number for the period in each age group and the per cent. of those thirteen to fourteen continuing one, two, and three or more years.

mentary school in the City of New York, from the point of view of the age of its pupils, is not an elementary school, but an elementary school, a high school, and a college, all within the elementary schools.

The practice of holding pupils in the elementary schools of the City of New York long after they are fourteen years of age<sup>1</sup> should be discontinued and attendance should be limited to the period between six and fourteen. To be sure, the education of children fourteen years of age who are still floundering in the fourth or fifth grade is not to be considered complete; but the further education of such children should not be regarded as the legitimate work of the ordinary elementary school.

Late entrance to school is one reason why children continue in the elementary schools of the city long after they are fourteen years old, but there are other factors, such as absence, inability to use the English language, retardation, crowded classrooms, and poor teaching,<sup>2</sup> which, together with the requirements of the course of study, make it impossible for the great majority of children to complete the elementary school within the limits of the period (six to fourteen). That children need to remain one, two, three, and even four years after becoming fourteen to complete the course of study—and some of them do not complete it even then—shows to what extent the proper length of the period of

Year 13-14	Age				Year 16 and Over
	13-14	14-15	15-16	16 and Over	
1905	51,511	31,951	12,203	3,752	1908
1906	53,959	34,124	14,465	4,526	1909
1907	58,653	38,444	17,133	4,933	1910
1908	60,235	40,885	17,692	4,624	1911
Total . . . . .	224,358	145,404	61,493	17,835	....
Per Cent. 13-14 Continuing . .		64.81	27.41	7.95	....

The data for this table were computed from the annual reports of the City Superintendent of Schools for the years 1905-11.

Few children enter the elementary school at fourteen to fifteen or older (for those entering the 1A grade fourteen and above, see Annual Report of the City Superintendent of Schools for 1911, p. 61), so the only children fourteen to fifteen there can be on register after promotion June, 1906, are the children thirteen to fourteen on register after promotion June, 1905, who remain in school; the same is true of each later age group. Hence, the children in each later age group are the same children that are in the thirteen-to-fourteen-year-old age group. Also there may be a few pupils leaving school at thirteen to fourteen who return at fifteen to sixteen, but it is unreasonable to suppose that the number of such children is large enough to affect the per cent. of the children thirteen to fourteen remaining in school thereafter one, two, and three years.

<sup>1</sup> Annual Report of the City Superintendent of Schools for 1911, Table XXVIII, p. 54.

<sup>2</sup> See Dr. McMurry's Report on the Quality of Instruction in New York City Kindergartens and the Elementary Public School.

elementary education has been disregarded, and to what extent, considering the conditions under which children have to work, their progress is retarded by the excessive requirement that all of them shall complete the same course.

(b) *Disregard of the Length of Attendance Within the Limits of the Elementary School Period.*—If six is made the age of entrance to the elementary school—the present legal age of entrance—and the fourteenth birthday is made the upper age limit of the elementary school period—practically the present upper age limit of the Compulsory Education Law—children will actually be in school within the limits of this period somewhat less than eight years. In consequence, the actual total length of the elementary school course of study should be somewhat short of eight school years.

There are no data at hand to show how long children are actually in attendance on the elementary schools of the city by their fourteenth birthday. This can, however, be estimated with reasonable accuracy. Children enter the elementary schools of the city at twelve to thirteen years of age and even older; the number of such children is, however, so small that they do not materially add to the number of pupils in the twelve-to-thirteen-year-old age group, or to the number of pupils in any other age group.<sup>1</sup> There are also children entering under six years of age, but the number is relatively small, and, for this reason, these pupils may be included among those entering at six. Hence, in estimating the actual length of attendance by fourteen, children may be regarded as entering the elementary schools of the City of New York at from six up to twelve years of age.

Table XIV shows for each of the years 1904-1906, inclusive, the number of children on register, June 30, six years old and under; the number one year later, seven to eight; two years later, eight to nine; three years later, nine to ten; four years later, ten to eleven; and five years later, eleven to twelve; also the total number for the period in each age group, the total number entering at each age, and the per cent. entering at each age:

<sup>1</sup> Working papers showing this have been filed with the Committee on School Inquiry.

Table XIV

Year Entering	Age						Year
	6 and Under	7-8	8-9	9-10	10-11	11-12	
1904.....	33,310	55,074	62,070	66,500	66,318	68,436	1909
1905.....	36,686	54,185	62,335	64,354	65,919	66,638	1910
1906.....	39,364	57,294	64,424	67,119	69,709	70,155	1911
Total of Each Age Group.....	109,360	166,553	188,829	197,973	201,946	205,229	....
Number Entering at Each Age.....	109,360	57,193	22,276	9,144	3,973	3,283	....
Per Cent. Entering at Each Age.....	53.29	27.87	10.85	4.46	1.93	1.60	....

The figures for this table were compiled from the annual reports of the City Superintendent of Schools for 1904-1911. The only way, of course, for the number of children six years of age to be larger in 1905 than in 1904 is for children seven years of age to enter school during 1905. To find, therefore, the number of children entering at a given age, i. e., at eleven to twelve, subtract from the number of pupils of the given age the number in the next lower age group and the remainder will be the number entering at the given age. The per cent. entering at a given age is found by finding what per cent. the number entering at a given age is of the eleven-to-twelve-year-old group.

It appears from Table XIV that 53.29 per cent. of the children in the elementary schools of the city enter at six to seven; 27.87 per cent. at seven to eight; 10.85 per cent. at eight to nine; 4.46 per cent. at nine to ten; and 1.93 per cent. at ten to eleven; and 1.60 at eleven to twelve. Some of the children entering at an advanced age have undoubtedly been in the elementary schools of other places, but it is equally true that some of these over-age pupils are entering the elementary school for the first time.<sup>1</sup>

Using these per cents. as the basis of judgment, we estimate that, out of each hundred pupils thirteen to fourteen years old in the elementary schools of the city, fifty-three will have been in attendance eight years by their fourteenth birthday; twenty-eight, seven years; eleven, six years; four, five years; two, four years; and two, three years—the equivalent of an attendance per pupil of 7.2 years.<sup>2</sup>

There are three ways in which the time pupils are in attendance by fourteen on the elementary schools of the city may be lengthened: (1) by decreasing the amount of irregular attendance; (2) by enforcing the Compulsory Education Law with a rigorous hand, thereby compelling pupils living in the city to enter school at seven; and (3) by educating

<sup>1</sup> Annual Report of the City Superintendent of Schools, 1911, Table XXXIII, p. 61.

<sup>2</sup> This estimate takes no account of the time that may have been lost by irregular attendance, or of the time pupils entering late may have been in the elementary schools of other places.

the people of the city to the importance of sending their children to school at six. There are, however, factors that seriously militate against children entering at six, notably, traffic conditions. Yet it ought to be possible to increase materially the number entering at this age; the further development of the kindergarten alone would contribute much to this end. It is apparent, however, that, after all has been done that it is possible to do, the attendance of pupils by fourteen would, on the average, be probably considerably less than eight years.

In view of the age limits for the work of the elementary school, six to fourteen, and, in view of the estimated actual average attendance during this period of New York City children, the elementary schools of the city are face to face with the problem of giving children an elementary education in from 7.2 years to something less than eight years. Hence, if children are to be able to complete their elementary education by fourteen, the actual total length of the course of study in the elementary schools of the city should be somewhat short of eight school years.

But, in determining the actual total length of the elementary school course of study for the city, little attention has been given to the actual length of time children are in attendance on school by fourteen, or to the number of years it actually takes pupils to complete the present course of study.<sup>1</sup> While pupils are, as we have seen, probably in attendance by fourteen on the average 7.2 years, 64.81 per cent. of all pupils thirteen to fourteen, exclusive of those graduating, continue in school between 7.2 and 8.2 years; 27.41 per cent. between 8.2 and 9.2 years; and 7.95 per cent. between 9.2 and 10.2 years.<sup>2</sup> Yet less than 42 per cent. of the pupils entering the elementary schools of the city ever complete the course of study.<sup>3</sup>

Further, of those graduating during the last six years but 23.36 per cent. were under fourteen; 36.68 per cent. were from fourteen to fifteen; 27 per cent. from fifteen to sixteen; 10.62 per cent. from sixteen to seventeen; and 2.34 per cent. were seventeen and over, or 76.64 per cent. were fourteen years old and over. (See table on page 593.) On the assumption that these graduates were in attendance on the average 7.2 years by fourteen, it therefore took 36.68 per cent. of them from 7.2 to 8.2 years to complete the course; 27 per cent. from 8.2 to 9.2 years; 10.62 per cent. from 9.2 to 10.2 years; and 2.34 per cent. from 10.2 to 11.2 years. Hence, on the foregoing assumption, the actual total length of the present elementary school course of study exceeds, by from one to four years, the actual time 76.64 per cent. of pupils are in attendance by their fourteenth birthday.

<sup>1</sup> The only data ever collected in the City on the number of years it takes pupils to complete the present elementary school course of study were those collected by Dr. Leonard P. Ayres of the Russell Sage Foundation. While these data were presented to the educational authorities of the City, they have never been published in detail.

<sup>2</sup> See note, pp. 588 and 589.

<sup>3</sup> See table, p. 583.

(c) *Disregard of Varying Abilities and Educational Needs of Different Groups of Children.*—The difference between children may be characterized as internal and as external. Among the internal differences are those of interest and capacity. Arithmetic is of interest to some children; the heroic and human, in literature and history, to others; whereas music, drawing, and manual training appeal strongly to others. Some children do well in literature; others in mathematics and science; while others are gifted with artistic ability and mechanical skill. The interests and ability of certain children incline them toward the professions; of others toward administrative and managing vocations; and, of others, toward industrial pursuits and commercial activities. Present methods of determining interest and capacity are, to be sure, crude; yet it is possible to group children with reasonable accuracy on the basis of inclination and ability.

Among the external differences influencing the educational needs of children are the immediate conditions without the home and within the family. It is obvious that the educational needs of a child in a district where the streets are clean, where the homes are spacious, where the language of the child's playfellows is pure, and where life in general is permeated with the spirit and ideals of America—it is obvious that the educational needs of such a child are different from those of a child who lives in a foreign and tenement section. It is equally obvious that the educational needs of a child from a home where a foreign tongue is the prevailing language, where the parents are foreign born, and ignorant of American customs, institutions, and ideals, are different from the educational needs of the child who is born of American parentage and who absorbs from birth the spirit of our institutions and life.

Equally influential, with the cultural conditions without and within the family, in determining the educational needs of children is the financial status of the home, because it is the financial status of the home

Year Graduated	Age at Graduation from Elementary School										
	Total	Under 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	Over 21
1906	19,353	779	4,396	7,134	4,971	1,740	300	32	1	.....	.....
1907	21,111	663	4,667	7,794	5,475	2,070	392	41	5	3	1
1908	23,509	722	4,821	8,626	6,377	2,459	442	53	8	.....	1
1909	27,152	730	5,444	9,811	7,496	3,014	558	82	11	5	3
1910	31,341	716	6,279	11,313	8,578	3,607	764	77	4	.....	.....
1911	35,329	743	6,903	13,206	9,708	3,862	802	86	over 19	.....	.....
Total of Each Age.....	157,795	4,353	32,510	57,884	42,605	16,752	3,258	371	46	11	5
Per Cent. Graduating at Each Age.	.....	2.76	20.60	36.68	27.00	10.62	2.06	.24	.03	.007	.003

Figures for this table were compiled from the annual reports of the City Superintendent of Schools for 1906-11.

which determines for a majority of children whether the elementary school will be the only school they will ever attend or whether they will also go to high school, to college, or to the university. So great is the economic pressure on the larger number of homes that the school life of the majority of children must end at the time when they can legally join the ranks of wage-earners. In a word, the majority of children, by reason of the economic status of the home, will attend the elementary school only. This being true, it should be apparent that the educational needs of such children are very different from the needs of children who are so situated that they may continue their education in higher institutions.

New York City not only has the largest elementary school population in the world, but this population is also the most heterogeneous. In the elementary schools of the city there are children of each of at least fifty-four<sup>1</sup> nationalities; these children represent the very widest differences in inclination and in native ability, in cultural influences without and within the family, and in the financial status of the home. Yet these differences have been very largely disregarded in the development of the present elementary school course of study and in the determination of its requirements. There is but one course of study for all children in regular classes, whether their ability be of a low or of a high order, whether they are of foreign-born or of American-born parentage, whether they live on the lower East Side or in Queens, whether they will stop school as soon as the law permits or will continue in school, whether on graduating from the elementary school they purpose to go to work or purpose to go to an academic, technical, or commercial high school. Whatever the inclination, the ability, the particular educational need of the child, each must meet the same requirements and pursue the same course of instruction.

The effect of disregarding the varying abilities and educational needs of different groups of children and of the failure to provide a number of different elementary school courses of study of varying quantitative requirements is revealed in the fact that, of the pupils in regular classes thirteen to fourteen years old on register after promotion June 30, for the five years, 1907-1911, inclusive, but 20.82 per cent. had attained the eighth grade; 29.92 per cent. the seventh; 25.57 per cent. the sixth; 15.44 per cent. the fourth; and 2.19 per cent. were still lingering in the third and lower grades. (See table below.<sup>2</sup>)

<sup>1</sup> See report on Races in the Different High Schools, 1908, on file at the office of the City Superintendent of Schools.

<sup>2</sup> The table on p. 595 shows for each of the years 1907-1911, inclusive, the number of children thirteen to fourteen years old in each grade from the first to the eighth, inclusive; also the total number for the period in each grade, the total in all grades, and the per cent. of the total number in each grade.



The effect is also revealed by the fact that, of all the pupils on register in regular classes June 30, 1911, after promotion, 23.30 per cent., or practically each fourth child, was behind his grade for his age;<sup>1</sup> and further, despite the fact that many pupils remain in the elementary schools of the city one, two, and three years after they are fourteen, of all those entering but 88.71 per cent. reach the sixth grade; 61.45 per cent. the seventh grade; 47.57 per cent. the eighth grade, and only 41.33 per cent. are ever able to complete the course.<sup>2</sup>

(d) *Summary.*—It is evident, in view of the foregoing, that the present elementary school course of study has been developed and is administered, first, without due regard to the length of the elementary school period, i. e., to the age limits within which children may with profit be subjected to the régime of the elementary school; second, without due regard to the actual length of time children are in attendance by fourteen, hence to the actual length of time the school has in which to give children an elementary education; and, third, without due regard to the varying abilities and educational needs of different groups of children, hence to the number able to complete the course; all of which has reacted to keep the rate of promotion below what it might have been under more favorable conditions.

#### (4) Changes Needed to Attain the Maximum Rate of Promotion

From the foregoing it is apparent that the changes needed in order to attain in the elementary schools of the city the maximum rate of promotion are:

(a) That the actual total length of each of the different elementary school courses of study be made to correspond (1) with the length of the period between six<sup>3</sup> and fourteen,<sup>4</sup> i. e., to the period children may

Year Ending June 30	Number of Children 13-14 by Grades								Total
	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	
1907	58	268	1,185	3,728	9,929	14,307	15,210	9,758	54,443
1908	51	274	1,240	3,961	9,618	14,359	16,089	10,526	56,118
1909	42	150	1,065	3,796	9,416	15,305	17,340	12,055	59,169
1910	38	136	859	3,099	8,122	15,017	18,413	13,001	58,685
1911	45	141	705	2,745	7,096	14,168	18,552	14,239	57,691
Total.....	234	969	5,054	17,329	44,181	73,156	85,604	59,579	286,100
Per Cent. of Total in Each Grade...	.08	.34	1.77	6.06	15.44	25.57	29.92	20.82	.....

(The data for this table were computed from the annual reports of the City Superintendent of Schools for 1907-1911.)

<sup>1</sup> See Table XII, p. 579.

<sup>2</sup> See table, p. 583.

<sup>3</sup> Probably the best age of entrance.

<sup>4</sup> Probably the beginning of pubescence and the age when children need a régime different from that of the elementary school.

with profit be kept under the régime of the elementary school, and (2) with the length of time pupils may reasonably be expected to be in actual attendance during this period.

(b) That the requirements of the elementary school be adapted to the varying abilities and educational needs of different groups of children, and such that all normal<sup>1</sup> children in regular attendance are able by fourteen to complete an elementary school course of study; hence as many courses of study of varying requirements as there are distinct groups of children of different abilities and educational needs. A brief discussion of each of these suggested changes follows:

(a) *Adjusting the Length of the Different Courses of Study.*—While the elementary school course of study is, in theory, as a rule, eight years in length, what its actual total length is has seldom been taken into account. The course of study is prescribed and pupils wishing to complete it must remain in school until its requirements are met, whether this takes eight years, ten years, or twelve and more years. The course of study could easily be made so long that to complete it would hold pupils in the elementary school until they were twenty-one and older. But it is obviously unwise educationally to make the elementary course of study actually longer by one, two, or three years than the length of time the rank and file of children may be expected to be in attendance—between six and fourteen—because, by such a procedure, not less than 42 per cent. of all the children who enter ever complete the elementary school. If, however, all normal children in regular attendance are to be able to finish an elementary course of study by fourteen, it should be evident that the actual length of each of the different courses offered must approximate closely the time children may with profit be held under the régime of the elementary school. Hence, instead of the length of the course of study determining the time children must remain in the elementary school, as is now the case, it is the time children may reasonably be expected to be in school between six and fourteen that must determine the actual total length of the course of study pursued.

The present course of study, with slight modifications, has been operative in the elementary schools of the city since 1905. Yet no one knows with exactness how long it is. The actual length of this course can only be determined as data are collected year by year with reference to length of time taken by normal pupils completing a given grade to do the work of that grade, and as these data are used to determine the actual length of each grade and of the entire course. Until this is done no one will know whether the present course of study is eight, nine, ten, or more years in length. Yet this course of unknown length is set up to be completed by the children who wish to graduate from the elementary school.

Likewise, no data have ever been collected on how long children

<sup>1</sup> Among normal children are included all pupils other than those physically and mentally defective, for whom special classes and special instruction should be provided.

are actually in attendance. The only way to determine this is to collect data, year by year, on the length of time children entering have been in attendance on the elementary schools of other places and of the city; and to collect data on the length of time children entering school for the first time in the city actually remain. Until such data are collected no one will know definitely how long children are actually in the elementary schools of the city, or how long they are in school between six and fourteen; consequently, it is impossible to determine what the actual total length of the courses of study should be.

It therefore appears that two sets of data fundamental to the proper adjustment and administration of a course of study in the City of New York are wholly lacking; (a) data on the actual total length of the present course of study, and (b) data on the actual length of time children are in attendance between six and fourteen.

(b) *Adjusting the Requirements and Determining the Number of Different Courses.*—The actual length of the elementary school course of study has been determined, in large measure, not in view of what the rank and file of children are able to accomplish within the limits of the time they may reasonably be expected to be in school by fourteen, but in view of certain assumptions of what is required of children entering high school and of the equally arbitrary assumptions of what pupils graduating from the elementary schools ought to know.

Experience has shown that it is impossible to make these academic and arbitrary standards real; and investigation<sup>1</sup> has shown that there is no uniformity in such standards even within the same system. In consequence, these standards vary, within the system, with the school; within a school, with the grade; also with the study. Indeed, there are practically as many academic standards in a given system as there are principals and teachers multiplied by the number of grades and by the number of studies in the curriculum.

Investigation shows also that these standards have been developed without regard to their effect. Their effect on the elementary schools of the city is revealed by the fact as stated above that, although pupils remain in school one, two, and three years after they are fourteen, less than 42 per cent. of those entering graduate;<sup>2</sup> by the fact that, of those graduating between 1906-1911, inclusive, 76.46 per cent. were fourteen and above;<sup>3</sup> and also by the fact that, of the pupils thirteen to fourteen years old, exclusive of those in special classes, on register June 30, after promotion, for the five years 1907-1911, inclusive, but 20.82 per cent. had attained the eighth grade; 29.92 per cent. the seventh; 25.57 per cent. the sixth; 15.44 per cent. the fifth; 6.06 per cent. the fourth; and 2.19 per cent. were still lingering in the third and lower grades.<sup>4</sup>

It is obviously unwise educationally for children to pursue a course

<sup>1</sup> See Non-Promotion and Failures by Studies, Board of Education, Cleveland, 1909.

<sup>2</sup> See table, p. 583.

<sup>3</sup> See table in note, p. 593.

<sup>4</sup> See note 2 and table, pp. 594 and 595.

of study which is out of proportion to their capacities and out of proportion to the time they will remain in school, and such that, at fourteen, they find themselves still in the fifth, sixth, seventh, or eighth grade. The best results can be achieved when children are permitted to pursue a course of study which they can complete within the time they will be in the elementary school between six and fourteen.

Children can be expected, as we have seen, to have been in the elementary schools of the City of New York, between six and fourteen, at least 7.2 years.<sup>1</sup> Hence, if children are to pursue an elementary school course of study which they will be able to finish, there must be as many courses of study, each complete in itself, in the elementary schools of the city as there are considerable groups of children of different abilities and educational needs; and the quantitative requirements of each of these courses must be determined, not in view of the demands of higher institutions, or in view of what may arbitrarily be thought desirable for children graduating from the elementary school to know, but in view of what the given group of children can accomplish between six and fourteen. In a word, instead of the quantitative requirements of the course of study determining the progress of children through the school, the actual progress of children through the school should determine the quantitative requirements of the course of study pursued.

Making the actual completion of an entire elementary school course of study by all normal children in regular attendance the basis of determining the requirements of the course of study in no way does away with the need of academic standards. It does, however, make these standards depend upon the actual progress of children through the school, and hence supplies an objective measure of whether the prevailing standards are too high or too low.

The adjustment of the course of study to the abilities and needs of different groups of children so that all normal children, regular in attendance, are able to cover a complete course of study between six and fourteen may be done in one of two ways: First, there may be one course for all schools in which there are both minimum and optional requirements, the minimum requirements being such as can be met by all normal pupils in regular attendance by fourteen, the optional requirements providing additional work for pupils able to do more than the minimum requirements. Second, there may be a number of distinct and complete courses, each with minimum and optional requirements, corresponding to the different groups of children of varying abilities and educational needs—at the very least, three such courses would probably be needed—one for bright pupils, one for pupils of medium ability, and one for dull pupils.<sup>2</sup> The development of different courses of study is, we believe, the preferable way of making the necessary adjustments.

<sup>1</sup> See p. 591.

<sup>2</sup> Demonstrations of the feasibility and effectiveness of providing different courses of study in the same school were made by Superintendent Ettinger when principal of P. S. 147, Manhattan, and as district superintendent in Richmond. Experiments along this line have also been carried on in Cleveland, Ohio.

The number of different courses of study needed in the elementary schools of the city can, to be sure, only be determined as data are collected on the abilities and educational needs of different groups of children. Similarly, the requirements of each of the different courses—that is, the character and quantity of subject matter and the quality of the work demanded of pupils—can only be finally determined as data are collected on the time taken in each course by normal pupils to complete each grade and used to modify the requirements so that all normal children in the given course in regular attendance are able to complete the course by fourteen.

#### (5) **The Maximum Rate of Promotion**

Pupils are generally promoted or not promoted according as they have or have not met certain academic standards.<sup>1</sup> When the right to promotion is thus determined, as has already been pointed out, the rate of promotion varies with the school system; within the system, with the school; and within the school, with the grade and teacher. Such variations in rate of promotion do injustice to the child, because work that is rewarded with advancement in one school is not so rewarded in another; hence the number of grades a pupil is able to complete depends largely on the teacher he has and on the school he attends. Nor is there any hope that this will not be true so long as the rate of promotion is determined by purely arbitrary assumptions of what children graduating from the elementary school ought to know.

However contrary it may be to present ways of thinking and to present school practice, arbitrary high school entrance requirements and arbitrary assumptions of what elementary school graduates ought to know should not determine the rate of promotion in the elementary school. The purpose of the elementary school is not to give a few pupils favored either by inheritance or by home surroundings, or by both, an arbitrarily assumed amount of knowledge, or to give 42 per cent. of its pupils a complete elementary school course of instruction and to permit the other 58 per cent. to flounder about in the lower grades until they finally drop from school. The elementary school should give each normal child in regular attendance, within the period children may with profit be kept under the régime of the elementary school, a complete elementary school course, the course completed by each child varying with his ability and educational needs. In view of this conception of the time limits on its work, and of this conception of the purpose of the elementary school, the rate of promotion can only be determined in view of the rapidity with which normal children in regular attendance must advance in order to finish an entire elementary school course of study. Courses of study, to be most effective, must be planned with reference to the en-

<sup>1</sup> These academic standards rest on arbitrary assumptions of what is required of pupils entering high school and on equally arbitrary assumptions of what pupils graduating from the elementary school ought to know.

tire elementary school period. Hence, the rate of promotion in the elementary school ought ultimately to be uniformly about 100 per cent.

The maximum rate of promotion will be about 100 per cent., and not 100 per cent., because there are always a number of pupils in a system who are not in attendance during a given term sufficiently long to enable them to complete the work of any course that may be offered; but there are also a number of pupils who, by reason of beginning their school work at an advanced age, or by reason of being improperly classified, will be able to cover two terms of work in one term; in this way the terms of work lost will tend to balance the terms of work gained, and the rate of promotion thus maintained at about 100 per cent.

The maximum rate of promotion cannot be secured, however, by one school promoting 150 per cent.<sup>1</sup> of its pupils and another school 50 per cent., or, as in the City of New York, by one school promoting 110 per cent. and another 35 per cent., or by the promotion of 98 per cent. of the pupils in one grade of a school, and 57 per cent. in another grade of the same school. Such a procedure, on the one hand, enables children to complete the elementary school course of study before the beginning of pubescence, which is unwise; and, on the other hand, holds children in the elementary school beyond this period, and only permits part of the pupils ever to complete a course, hence defeats the very purpose of the elementary school. Consequently, the rate of promotion in each grade and in each school of a system should be uniformly about 100 per cent.

If it is found that a number of normal pupils in regular attendance are unable to do the work of a given grade in a given course the remedy is not the non-promotion of these pupils. These pupils should either be reclassified with respect to the course they should pursue or the requirements of the course they are following should be lowered. Similarly, if it is found that children in regular attendance are able to do more than is required by the course they are in, the remedy is not double promotion and the completion of the elementary school before the beginning of pubescence. These pupils should either be put in a more difficult course or the requirements of the course they are in should be raised. For the constant factors in the elementary school are (1) the actual total length of each of the several courses of study, and (2) the rate of promotion; the variable factors are (1) the abilities and needs of children, and (2) the particular courses of study that should be offered and the requirements of these courses. Hence, it is not the rate of promotion, and, in consequence, the actual total length of the courses of study, that should constantly vary, but the particular courses of study that should be offered and the requirements of these courses. It is these that must be constantly adjusted to the abilities and needs of the children with which each school has to do. Consequently, while the actual total length of the courses of study and the rate of promotion should be practically the same in all

<sup>1</sup> The rate of promotion for a term in a school is 150 per cent., when during the term 50 per cent. of the pupils of the school complete one term's work and 50 per cent. by receiving double promotion complete two terms' work.

the schools of a system, the particular courses of study offered and the requirements of these courses may, and generally should, vary with the school.<sup>1</sup>

## (6) Conclusions

That each normal child in regular attendance between six (probably the best age of entrance) and fourteen (probably the beginning of pubescence and the age when children need a régime different from that of the elementary school) may be able to complete an entire elementary school course of study, hence that conditions may be favorable to a maximum rate of promotion in the elementary schools of the city, we recommend:

- (a) That data be collected—
  - (1) On the best age of entrance to the elementary school.
  - (2) On the age at which children need a régime different from that of the elementary school.
- (b) That data be collected—
  - (1) On the number of normal children entering and completing the present course of study.
  - (2) On the actual total length of the present course of study.
  - (3) On the length of time normal children remain in attendance (including attendance on the schools of other places); also on the length of time children are in attendance between six and fourteen.
  - (4) On the groups of children of different abilities and educational needs.
- (c) That there be as many different courses of study as there are groups of children having different abilities and educational needs.
- (d) That the actual total length of these different courses of study and hence their requirements be made such that each normal child in regular attendance between six and fourteen is able to complete some one of these courses.
- (e) That the actual total length of each of these different courses of study and hence the requirements of each be continuously revised in view of data [suggested in (b)] collected by terms.<sup>2</sup>

## II.—Promotion, Non-Promotion, and Size of Class

One of the most important working conditions of any school is the size of class—the number of children one teacher is expected to instruct. When classes contain from fifty to sixty or more pupils it is impossible

<sup>1</sup> See Dr. McMurry's Report on Course of Study.

<sup>2</sup> Lack of time prevents us from including in this report a study of Methods of Making Promotions. Such a study should, however, be made.

for the teacher to give to each child adequate personal attention and direction. Hence, the efficiency of the school may be materially reduced by the presence of over-size classes.

### 1. Maximum Size of Regular Classes

The maximum size of a regular elementary school class<sup>1</sup> is fixed, by the Board of Education of the city, at fifty. Principals, under the By-Laws of the Board, are free to organize classes up to fifty, but, if it becomes necessary, as is often the case, to put more than fifty pupils in a class, such a class cannot be formed without the permission of the Board of Superintendents.<sup>2</sup> Fifty is, therefore, recognized as the maximum beyond which the number of pupils in a class cannot be increased without reducing the efficiency of the school. While fifty is fixed as the maximum, and while the continued lack of adequate school accommodations makes it necessary to put tens of thousands<sup>3</sup> of children annually in classes having fifty and above, there is a strong feeling among the school officials of the city that, if the school is to do its work efficiently, the number of pupils per class ought not to exceed forty.<sup>4</sup> We share this feeling.

### 2. Number of Pupils in Classes of Each Size

What the actual size of class was in New York City and how the children were distributed at the end of the February-June term, 1911, among the classes of different sizes is shown by Table XV. This table gives, by grades, the number of pupils in regular classes on register before promotion June 30, 1911, in classes under thirty-five, thirty-five to forty, etc.; also the per cent. of the total register of each grade in the classes of each size:

<sup>1</sup>Regular classes are to be distinguished from special classes,—that is, from classes for backward, defective, crippled, blind, deaf, and anæmic children, all of which are smaller than regular classes. This report has to do only with regular classes.

<sup>2</sup>Manual of the Board of Education, Sec. 45-7, p. 56.

<sup>3</sup>Annual Report of the City Superintendent of Schools for 1910, pp. 94-95; also this report, Table XV, p. 603.

<sup>4</sup>Annual Report of the City Superintendent of Schools for 1904, p. 98.



Table XV

Grades	Total Register	Register by Grades in Regular Classes as of June 30, 1911					Per Cent. of Total Register of Each Grade in Classes of Each Size						
		Classes Under 35	35 to 40	41 to 50	51 to 55	56 to 60	Over 60	Classes Under 35	35 to 40	41 to 50	51 to 55	56 to 60	Over 60
1A	43,012	3,014	4,603	20,370	8,060	4,340	2,625	7.01	10.70	47.36	18.74	10.09	6.10
1B	49,832	2,487	8,204	29,381	7,530	2,230	.....	4.99	16.46	58.96	15.11	4.48	.....
2A	39,607	2,876	5,786	23,602	5,461	1,759	123	7.26	14.61	59.59	13.79	4.44	.31
2B	44,608	2,726	6,800	26,837	6,755	1,429	61	6.12	15.24	60.16	15.14	3.20	.14
3A	40,180	2,916	7,303	22,700	6,122	1,017	122	7.26	18.17	56.50	15.24	2.53	.30
3B	42,911	3,195	6,726	26,287	5,588	1,054	61	7.45	15.67	61.26	13.02	2.46	.14
4A	38,573	3,249	7,255	22,835	4,434	800	.....	8.42	18.81	59.20	11.50	2.07	.....
4B	39,909	3,330	7,863	23,830	4,429	457	.....	8.34	19.70	59.72	11.09	1.15	.....
5A	36,823	3,388	7,827	23,053	2,212	343	.....	9.20	21.26	62.60	6.01	.93	.....
5B	36,035	4,164	8,850	20,320	2,528	173	.....	11.56	24.56	56.38	7.02	.48	.....
6A	32,873	4,556	9,714	17,109	1,378	116	.....	13.86	29.55	52.05	4.19	.35	.....
6B	31,134	5,294	11,072	13,618	1,038	112	.....	17.00	35.56	43.73	3.35	.36	.....
7A	27,667	5,476	10,166	11,592	373	60	.....	19.79	36.74	41.90	1.35	.22	.....
7B	24,791	6,007	9,137	9,315	332	.....	.....	24.23	36.86	37.57	1.34	.....	.....
8A	21,112	5,834	7,324	7,695	259	.....	.....	27.64	34.63	36.45	1.23	.....	.....
8B	19,545	5,632	5,109	8,194	610	.....	.....	28.82	26.14	41.92	3.12	.....	.....
Total....	568,612	64,144	123,739	306,738	57,109	13,890	2,992	11.28	21.76	53.94	10.04	2.44	.53

The data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911.

Of the 568,612 pupils on register in regular classes before promotion June 30, 1911, 64,144, or 11.28 per cent., were, it will be observed, in classes under thirty-five; 123,739, or 21.76 per cent., in classes of thirty-five to forty; 306,738, or 53.94 per cent., in classes of forty-one to fifty; 57,109, or 10.04 per cent., in classes of fifty-one to fifty-five; 13,890, or 2.44 per cent., in classes of fifty-six to sixty; and 2,992, or .53 per cent., in classes over sixty. Thus 494,621, or 86.98 per cent., were in classes of fifty and under, and 73,991, or 13.01 per cent., were in classes having more than fifty.

Of the 73,991 pupils in over-size classes—classes having fifty-one to fifty-five, fifty-six to sixty, and over sixty—

						Cumulative Per Cent.
15,025	or	20.31	per cent.	were in the	1A Grade	20.31
9,760	"	13.19	"	" " "	1B "	33.50
7,343	"	9.92	"	" " "	2A "	43.42
8,245	"	11.14	"	" " "	2B "	54.56
7,261	"	9.81	"	" " "	3A "	64.37
6,703	"	9.06	"	" " "	3B "	73.43
5,234	"	7.07	"	" " "	4A "	80.50
4,886	"	6.60	"	" " "	4B "	87.10
2,555	"	3.45	"	" " "	5A "	90.55
2,701	"	3.65	"	" " "	5B "	94.20
1,494	"	2.02	"	" " "	6A "	96.22
1,150	"	1.56	"	" " "	6B "	97.78
433	"	.59	"	" " "	7A "	98.37
332	"	.45	"	" " "	7B "	98.82
259	"	.35	"	" " "	8A "	99.17
610	"	.83	"	" " "	8B "	100.00

Twenty and thirty-one one-hundredths (20.31) per cent., or one-fifth, of all the pupils in over-size classes at the end of the February-June term, 1911, it will be observed, were in the 1A grade; 54.56 per cent. in the 1A-2B grades; 87.10 per cent. in the grades 1A-4B; and 97.78 per cent. in the grades 1A-6B. In short, over-size classes were confined, at the end of the February-June term, 1911, to the 6B and lower grades.

If comparison is made, grade by grade, between the pupils within each grade in the classes of each of the several sizes (see Table XV) it will be noted that the per cent. of pupils in small classes gradually increases from the lowest to the highest grade. In classes under thirty-five the per cent. increases from 7.01 per cent. in the 1A to 28.82 per cent. in the 8B, and, in classes having thirty-five to forty, from 10.70 per cent. to 26.14 per cent. A corresponding decrease will be noted from the 1A to the 8B grades in the per cent. of pupils in over-size classes. In classes having fifty-one to fifty-six the per cent. decreases from 18.74 per cent. in the 1A to 3.12 per cent. in the 8B; in classes having fifty-six to sixty from 10.09 per cent. to zero; and in classes having over sixty from 6.10 per cent. to zero.

It, therefore, appears that the size of a class varies with the grade; that the 1A has the smallest number of small classes and the largest

number of large classes, and the 8B has practically the largest number of small classes and the smallest number of large classes.

The presence of large classes in the grades 1A-6B and of small classes in the grades 7A-8B is due partly to policy and partly to necessity. There is a feeling among the school officials of the city that classes in the upper grades should be smaller than in the lower grades. Hence, in schools where there are ample accommodations for all pupils, classes in the 7A-8B grades are so organized as to have from thirty-five to forty pupils, whereas, in the grades 1A-6B, classes range from forty to forty-five. In most cases, small classes in the upper grades and large ones in the lower grades are, however, due to necessity. In many districts, so many pupils leave school in the 6B grade and before that the numbers remaining in the 7A-8B grades are small. Unless these pupils are transferred to a central school, it is impossible to do otherwise than to have small classes. In contrast, the lower grades are crowded. To care for all the pupils in these grades, it is necessary to make the classes large.

Table XV shows there were 64,144 pupils on register June 30, 1911, in classes under thirty-five, and 73,991 in class of above fifty. It is generally agreed, as heretofore stated, that classes having fifty and above are too large for effective work; there is, however, equal unanimity of opinion that classes under thirty-five are too small—not too small for educational work of the very highest type, but too small to be economical. The presence in the system of a portion both of under-size classes (classes under thirty-five) and of over-size classes (classes above fifty) is due: (1) to a failure in the past to standardize classrooms (in the same building—particularly in old buildings—one classroom will accommodate thirty pupils, another sixty; while there are old buildings in which there are no rooms with a seating capacity above thirty-two to thirty-five); (2) to the rigid segregation of the sexes, particularly in the grades 1A-6B; (3) to a failure on the part of some principals to exercise care in the organization of classes (in the same grade, one class may have thirty-five pupils, another fifty-five); and (4) to a hesitancy on the part of principals to place in one class groups of pupils from two grades.<sup>1</sup> Should no buildings be constructed hereafter with regular classrooms having a seating capacity of less than forty to forty-five pupils; should the interior arrangements of certain old buildings be so changed that all classrooms in these buildings would be of standard size—accommodate from forty to forty-five pupils; should mixed classes, at least in the grades 1A-6B, be formed freely; should principals exercise more care in the organization of classes; and, finally, should the policy be made general of putting groups of pupils from two grades into one class<sup>2</sup>—if these things should be done the number of under-size classes could

<sup>1</sup> See Monthly Reports for April, 1911, on file at the office of the City Superintendent of Schools.

<sup>2</sup> This is now done at times, particularly in the boroughs of Richmond and Queens.

be lessened, and the number of over-size classes reduced approximately 10 per cent.<sup>1</sup>

### 3. Rate of Promotion in Classes of Each Size

The rate of promotion at the end of the February-June term, 1911, in the classes of each of the several sizes is shown by Table XVI. This table gives, by grades, the per cent. of the register in each size of class promoted at the end of the February-June term, 1911; also the per cent. not promoted. (See page 607.)

When the several grades are considered as a whole it will be observed that the highest per cent. of promotion was in classes under thirty-five, the rate being 89.36 per cent. The rate of promotion in classes of thirty-five to forty was, however, only .22 of 1 per cent. less, and, in classes of forty-one to fifty, only .41 of 1 per cent. less than in classes under thirty-five. Hence, for practical purposes, the rate of promotion was the same in all classes having fifty and under. But the rate of promotion in classes of fifty-one to fifty-five was lower than in classes under thirty-five by 1.68 per cent., in classes of fifty-six to sixty by 5.91 per cent., and in classes over sixty by 18.17 per cent. The major part of the difference in the rate of promotion, at least in classes of fifty-six to sixty, and in classes over sixty, in comparison with the rate of promotion in classes under thirty-five, was, however, due to the fact that pupils in the classes of these two sizes are principally in the lower grades, where the rate of promotion is relatively low. No such differences, it will be observed, appear, if comparison is made, grade by grade, between the rate of promotion in the classes of the several sizes.

The differences, such as they are, in the rate of promotion within each grade, in these different-size classes, become clearer, if all classes of fifty and under are combined and all classes of over fifty, and comparison is made between the rate of promotion in classes of these two sizes only. Table XVII gives by grades the per cent. of promotion in classes of fifty and under, in classes of over fifty, and the per cent. of promotion in classes of fifty and under, above or below the per cent. of promotion in classes over fifty; also the increase in number of pupils that would have been promoted in classes of over fifty at the rate of promotion in classes of fifty and under. (See page 608.)

In nine out of sixteen grades the higher rate of promotion at the end of the February-June term, 1911, was in classes of fifty and under; in seven the higher rate was in classes of over fifty. The rate of promotion was higher in classes of over fifty in the 1B, by .29 of 1 per cent.; in the 4B by .59 of 1 per cent.; in the 5A by 1.29 per cent.; in the 5B by .09 of 1 per cent.; in the 6B by 1.58 per cent.; in the 7B by 3.09 per

<sup>1</sup> The working papers have been filed with the Committee on School Inquiry. These papers give data for the schools of Manhattan, the Bronx, and part of Brooklyn, where reductions in the number of classes might have been made in 1911.

Table XVI

Grades	Per Cent. of Register by Grades in Each Size of Class Promoted						Per Cent. of Register by Grades in Each Size of Class Not Promoted					
	Classes Under 35	35 to 40	41 to 50	51 to 55	56 to 60	Over 60	Classes Under 35	35 to 40	41 to 50	51 to 55	56 to 60	Over 60
1A	75.35	80.32	77.04	74.94	73.66	68.57	24.65	19.68	22.96	25.06	26.34	31.43
1B	87.82	88.26	88.87	89.23	88.12	.. ..	12.18	11.74	11.13	10.77	11.88	.. ..
2A	91.45	87.94	89.09	90.08	85.05	88.62	8.55	12.06	10.91	9.92	14.95	11.88
2B	91.97	90.56	90.69	89.95	89.01	91.80	8.03	9.44	9.31	10.05	10.99	8.20
3A	90.98	90.55	89.59	89.25	88.89	89.34	9.02	9.45	10.41	10.75	11.11	10.66
3B	90.64	89.40	91.22	90.35	89.47	91.80	9.36	10.60	8.78	9.65	10.53	8.20
4A	89.75	90.20	90.20	89.26	85.25	.. ..	10.25	9.80	9.80	10.74	14.75	.. ..
4B	92.04	90.82	89.60	90.77	89.93	.. ..	7.96	9.18	10.40	9.23	10.07	.. ..
5A	88.37	89.28	88.65	89.78	91.84	.. ..	11.63	10.72	11.35	10.22	8.16	.. ..
5B	89.72	89.50	89.83	89.99	87.28	.. ..	10.28	10.50	10.17	10.01	12.72	.. ..
6A	89.11	89.26	88.92	87.81	92.24	.. ..	10.89	10.74	11.08	12.19	7.76	.. ..
6B	88.74	89.05	89.90	90.66	93.75	.. ..	11.26	10.95	10.10	9.34	6.25	.. ..
7A	88.75	87.99	87.82	82.84	71.67	.. ..	11.25	12.01	12.18	17.16	28.33	.. ..
7B	88.95	88.34	89.89	92.17	.. ..	.. ..	11.05	11.66	10.11	7.83	.. ..	.. ..
8A	89.70	89.45	89.72	81.85	.. ..	.. ..	10.30	10.55	10.28	18.15	.. ..	.. ..
8B	93.64	93.87	95.20	96.56	.. ..	.. ..	6.36	6.13	4.80	3.44	.. ..	.. ..
Total.....	89.36	89.14	88.95	87.68	83.45	71.19	10.64	10.86	11.05	12.32	16.55	28.81

The data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911.

Table XVII

Grades	Per Cent. of Promotion in Classes of 50 and Under	Per Cent. of Promotion in Classes of Over 50	Per Cent. of Promotion in Classes of 50 and Under Above or Below the Per Cent. of Promotion in Classes Above 50	Increase in Number That Would Have Been Promoted in Classes Over 50 at Rate in Classes of 50 and Under
1A	77.40	73.46	3.94	592
1B	88.68	88.97	— .29	—29
2A	89.10	88.85	.25	19
2B	90.76	89.80	.96	79
3A	89.92	89.20	.72	52
3B	90.83	90.23	.60	40
4A	90.15	88.65	1.50	78
4B	90.10	90.69	— .59	—29
5A	88.77	90.06	—1.29	—33
5B	89.73	89.82	— .09	—2
6A	89.06	88.15	.91	14
6B	89.38	90.96	—1.58	—18
7A	88.07	81.29	6.78	29
7B	89.08	92.17	—3.09	—10
8A	89.62	81.85	7.77	20
8B	94.38	96.56	—2.18	—13
Net Increase	.....	.....	....	789

cent.; and in the 8B by 2.18 per cent. But the difference in the rate of promotion was either so small or the pupils in the given grade were so few that the higher rate of promotion in classes above fifty in these seven grades makes a difference of only 134 promotions.

In each of the grades 1A-4A—containing 80 per cent. of all pupils in over-size classes<sup>1</sup>—the rate of promotion, with the exception of the 1B grade, was higher in classes of fifty and under. But, with the exception of the 1A grade, the differences in the rate of promotion are too small to materially affect the number of promotions. The higher rate for classes of fifty and under in the 2A grade would have increased the number of promotions in classes of over fifty by nineteen—the equivalent of one additional 2A promotion to each 386 pupils; in the 2B by seventy-nine—the equivalent of one additional 2B promotion to each 104 pupils; in the 3A grade by fifty-two—the equivalent of one additional 3A promotion to each 139 pupils; in the 3B by forty—the equivalent of one additional 3B promotion to each 167 pupils; and in the 4A grade by seventy-eight—the equivalent of one additional 4A promotion to each sixty-seven pupils. In the 1A grade, however, the higher rate of promotion would have increased the number advanced by 592—the equivalent of one additional promotion to each twenty-five 1A pupils in classes of over fifty. The rate of promotion in classes of fifty and under was also higher in the 7A by 6.78 per cent., and in the 8A by 7.77 per cent. The number of pupils in these grades was, however, small, so that, had the

<sup>1</sup> See table, p. 604.

higher rate for classes of fifty and under prevailed in classes of over fifty, the number of 7A promotions would have been increased only twenty-nine, and the number of 8A promotions only twenty.

Thus, although the higher rate of promotion is found, in the majority of grades, in classes of fifty and under, this higher rate is so small that, had promotions in each of the several grades been the same for classes of over fifty as for classes of fifty and under, there would have been, in classes of over fifty, a net increase of only 789 promotions out of a total of 73,991 pupils—the equivalent of one additional promotion to each ninety-four pupils in classes of over fifty.

#### 4. Elimination of Over-Size Classes

The fact that the rate of promotion for all grades, with the exception of the 1A, at the end of the February-June term, 1911, was practically the same in the classes of the several sizes is, however, not sufficient evidence that the opportunities enjoyed and the instruction received by children in the classes of the several sizes are equally good. Rate of promotion merely indicates the per cent. of children advanced but in itself does not indicate the relative educational opportunities and achievements of the children. Children may be promoted for reasons other than that they are prepared for the work of the next grade, i. e., it may be necessary to promote pupils in order to make room for children entering the school. Data derived from tests of the educational achievements of children are not at hand to show to what extent classes having over fifty pupils offer less favorable opportunities for work than smaller classes. Teachers and school officials are, however, a unit in the opinion that classes having fifty pupils and above are too large and should be eliminated.

In view of the number of pupils (73,991) at the end of the February-June term, 1911, in classes having over fifty, we estimate<sup>1</sup> that, to reduce all over-size classes to forty-five pupils per class, exclusive of the possible reduction in the number of such classes by the changes and improvements in organization suggested above,<sup>2</sup> would require an investment in buildings of approximately \$2,500,000, and probably \$50,000 annually for upkeep and maintenance; also for the salaries of additional teachers an annual minimum of not less than \$180,000.<sup>3</sup>

<sup>1</sup> The actual number of over-size classes was estimated by dividing the number of pupils in classes of fifty-one to fifty-five by fifty-three, the probable median size of these classes; by dividing the number of pupils in classes of fifty-six to sixty by fifty-eight, the probable median size, and by dividing the number of pupils in classes of sixty and above by sixty. The number of classes needed to care for all pupils in over-size classes at forty-five per class was estimated by dividing the total number of pupils in over-size classes by forty-five. The difference between the two estimates was then reduced by 10 per cent., in view of the probable reduction through the administrative changes suggested above, in order to find the number of additional classes for which provision should be made to reduce all over-size classes to forty-five pupils per class.

<sup>2</sup> See p. 605.

<sup>3</sup> These estimates are based on the cost of new buildings as given in the Corporate Stock Requirements submitted by the Board of Education, March, 1911, on the cost of sites as given in the Annual Financial and Statistical Report of the Board of Education for 1910, and on Salary Schedules for Teachers, 1912.

### 5. Over-Size Classes as a Factor in Non-Promotion and Congestion

There were, as we have seen, only 789 less promotions among the 73,991 pupils in over-size classes than there would have been had these pupils been promoted at the rate for classes of fifty and under. But, in the 1A grade alone, by reason of the lower rate, the promotions were, as we have seen, less by 592—the equivalent of one less promotion to each twenty-five 1A pupils in over-size classes. Hence, as promotions were made at the end of the February-June term, 1911, over-size classes were no material factor, except in the 1A grade, in increasing the number of non-promotions.

It is reasonable to assume that the small number of non-promoted children (197) caused by the slightly lower rate of promotion prevailing in the grades above the 1A was absorbed in the classes already found in these grades, and that, to care for the non-promotions (592) caused by the decidedly lower rate of promotion in the 1A grade, it would be necessary to form only a few, if any, additional 1A classes. Hence, as promotions were made at the end of the February-June term, 1911, over-size classes contributed but slightly, if at all, to congestion.

### 6. Conclusions

The foregoing discussion may be summarized thus:

(1) There were, at the end of the February-June term, 1911, 73,991 pupils in over-size classes—that is, in classes having fifty and above. The greater number of over-size classes was in the grades 1A-6B.

(2) The size of class varies with the grade; the 1A grade has the smallest number of small classes and the largest number of large classes, while the 8B grade has the largest number of small classes and the smallest number of large classes.

(3) Both the number of under-size classes (classes having under thirty-five) and of over-size classes (classes of fifty and above) can be reduced approximately 10 per cent. through administrative changes.

(4) The rate of promotion for all grades, with the exception of the 1A grade, at the end of the February-June term, 1911, was practically the same in the classes of the several sizes.

(5) As promotions were made at the end of the February-June term, 1911, over-size classes were no material factor, except in the 1A grade, in increasing the number of non-promotions, and contributed but slightly, if at all, to congestion.

(6) Although there was only a very slight difference, with the exception of the 1A grade, in the rate of promotion at the end of the February-June term, 1911, for classes under fifty and for classes over fifty, and although data derived from tests of the educational achievements of



children are not at hand to prove to what extent classes having over fifty offer less favorable opportunities for work than smaller classes, teachers and school officials are a unit in the opinion that classes having over fifty pupils should be eliminated and that all classes should be reduced to at least not more than forty-five pupils. To accomplish this, in view of conditions at the end of the February-June term, 1911, would require for buildings approximately \$2,500,000 and probably \$50,000 annually for upkeep and maintenance; also, for salaries of additional teachers, an annual minimum of not less than \$180,000.

### III.—Promotion, Non-Promotion, and Absence

The school year in the City of New York is forty weeks in length, divided into two terms of twenty weeks each. Holidays reduce the actual length of a term to somewhat less than one hundred days. Any considerable absence, due either to irregular attendance or to late entrance, naturally affects the educational progress of children.

#### I. Number of Children Absent Ten Days and Less, Eleven to Twenty, Etc.

For the purpose of studying the effect of absence<sup>1</sup> on the educational progress of children, pupils have been grouped on the basis of their being absent a given number of days during the February-June term, 1911. Table XVIII gives by grades the number of pupils on register in regular classes June 30, 1911, absent ten days and less, eleven to twenty, twenty-one to thirty, etc.; also the per cent. of the total register of each grade absent ten days and less, eleven to twenty, etc. (See page 612.)

Of the 568,612 pupils on register in regular classes June 30, 1911, 382,406, or 67.25 per cent., were absent during the February-June term, 1911, ten days and less; 97,512, or 17.15 per cent., eleven to twenty days; 39,391, or 6.93 per cent., twenty-one to thirty days; 19,297, or 3.39 per cent., thirty-one to forty days; and 30,006, or 5.28 per cent., forty-one days and above.

The Compulsory Education Law operates primarily on children between the ages of seven and fourteen; according to its provisions, children between these ages must be in attendance the entire time school is in session. The great majority of the children in the grades 2A-6B are between these age limits. It is, therefore, astonishing that 65,450, or 17.10 per cent. of all the children in these grades, should be absent during the February-June term, 1911, eleven to twenty days; 25,359, or 6.63 per cent., absent twenty-one to thirty days; 11,939, or 3.12 per cent., absent thirty-one to forty days; and 15,705, or 4.10 per cent.—the equivalent of one in each twenty-five—absent forty-one days and above.<sup>2</sup>

<sup>1</sup> It is impossible to distinguish in this report between absence due to irregular attendance and absence due to late entrance.

<sup>2</sup> For a discussion of the Compulsory Attendance Service, see Dr. Burks's report.

Table XVIII

Grades	Total Register as of June 30, 1911	Register in Regular Classes as of June 30, 1911					Per Cent. of Total Register in Each Grade				
		Absent 10 Days and Less	11 to 20	21 to 30	31 to 40	41 and Above	Absent 10 Days and Less	11 to 20	21 to 30	31 to 40	41 and Above
1A	43,012	17,215	8,708	5,010	3,188	8,801	40.02	20.25	11.65	7.41	20.67
1B	49,832	28,342	10,800	4,938	2,489	3,263	56.88	21.67	9.91	4.99	6.55
2A	39,607	24,826	7,743	3,240	1,612	2,186	62.68	19.55	8.18	4.07	5.52
2B	44,608	29,970	8,063	3,130	1,572	1,873	67.19	18.08	7.02	3.52	4.19
3A	40,180	27,841	6,865	2,690	1,190	1,594	69.29	17.09	6.69	2.96	3.97
3B	42,911	30,157	7,146	2,684	1,257	1,667	70.28	16.65	6.25	2.94	3.88
4A	38,573	26,943	6,445	2,494	1,191	1,497	69.85	16.71	6.47	3.09	3.88
4B	39,909	28,057	6,575	2,552	1,159	1,566	70.31	16.47	6.39	2.91	3.92
5A	36,823	25,420	6,285	2,424	1,148	1,546	69.03	17.07	6.58	3.12	4.20
5B	36,035	25,312	5,958	2,293	1,083	1,389	70.24	16.94	6.36	3.01	3.85
6A	32,873	23,144	5,396	2,069	914	1,220	70.41	16.41	6.29	2.87	4.02
6B	31,134	22,530	4,974	1,783	780	1,067	72.36	15.98	5.73	2.50	3.43
7A	27,667	20,537	4,088	1,501	666	875	74.23	14.76	5.43	2.42	3.16
7B	24,791	18,854	3,655	1,167	514	601	76.05	14.74	4.72	2.07	2.42
8A	21,112	16,638	2,828	925	318	403	78.81	13.40	4.38	1.51	1.90
8B	19,545	16,620	1,983	491	183	268	85.03	10.14	2.52	.94	1.37
Total.....	568,612	382,406	97,512	39,391	19,297	30,006	67.25	17.15	6.93	3.39	5.28

The data for this table were computed from reports made to the Committee on School Inquiry, June, 1911.

If comparison is made grade by grade between the per cent. of all pupils within a grade absent each of the several periods, it will be observed that the per cent. of children absent ten days and less is the lowest in the 1A grade and the highest in the 8B, increasing from 40.02 per cent. in the 1A to 85.03 per cent. in the 8B. With each of the less favorable periods of absence, the reverse is true. Absence eleven to twenty days decreases from 20.25 per cent in the 1A to 10.14 per cent. in the 8B; twenty-one to thirty days from 11.65 per cent. to 2.52 per cent.; thirty-one to forty days from 7.41 per cent. to .94 per cent.; and absence forty-one days and above from 20.67 per cent. to 1.37 per cent. Hence, the largest amount of absence is in the 1A grade; this gradually decreases to the 8B, in which grade there is the least amount of absence.

The difference in the amount of absence in the several grades and the gradual decrease from the 1A to the 8B become clearer if the pupils on register June 30, 1911, are grouped according to (1) absence twenty days and less, and (2) absence twenty-one days and more. Table XIX gives the per cent. of the register of each grade in regular classes as of June 30, 1911, absent twenty days and less and absent twenty-one days and more:

Table XIX

Grades	Per Cent. of Total Register as of June 30, 1911, Absent Twenty Days and Less	Per Cent. of Total Register as of June 30, 1911, Absent Twenty-one Days and More
1A.....	60.27	39.73
1B.....	78.55	21.45
2A.....	82.23	17.77
2B.....	85.27	14.73
3A.....	86.38	13.62
3B.....	86.93	13.07
4A.....	86.56	13.44
4B.....	86.78	13.22
5A.....	86.10	13.90
5B.....	86.78	13.22
6A.....	86.82	13.18
6B.....	88.34	11.66
7A.....	88.99	11.01
7B.....	90.79	9.21
8A.....	92.21	7.79
8B.....	95.17	4.83
Total.....	84.40	15.60

The amount of absence in the two lowest grades, and especially in the 1A, is particularly large, because pupils in these grades are young; the amount of sickness among them is greater than among older children; they have not as yet acquired the school-going habit, and parents generally do not feel it necessary to keep such young children in

school regularly. From the 2A to the 6A grade, absence is checked to a greater or less extent by the enforcement of the Compulsory Education Law. The further decrease in the 6B and later grades is probably due to the withdrawal of larger numbers of pupils who were more or less irregular in attendance,<sup>1</sup> and to the more steady habits and fixed purposes of those remaining. But the amount of absence in all grades is large; whether it cannot be greatly reduced is a question worthy of earnest and immediate consideration by the school authorities.

## 2. Rate of Promotion in Each of the Several Periods of Absence

The effect of absence on the progress of children is shown by Table XX. This table gives by grades and for each period of absence the per cent. of the register as of June 30, 1911, promoted; also the per cent. not promoted:

Table XX

Grades	Per Cent. of Register as of June 30, 1911, Promoted					Per Cent. of Register as of June 30, 1911, Not Promoted				
	Absent 10 Days and Less	11 to 20	21 to 30	31 to 40	41 and Above	Absent 10 Days and Less	11 to 20	21 to 30	31 to 40	41 and Above
1A	89.47	85.75	79.02	71.01	40.56	10.53	14.25	20.98	28.99	59.44
1B	92.80	89.02	85.52	80.31	63.84	7.20	10.98	14.48	19.69	36.16
2A	92.19	88.94	84.78	78.97	67.56	7.81	11.06	15.22	21.03	32.44
2B	93.26	89.73	86.01	81.36	66.84	6.74	10.27	13.99	18.64	33.16
3A	92.77	88.27	83.31	80.60	63.24	7.23	11.73	16.69	19.40	36.76
3B	93.62	89.69	84.24	78.20	63.05	6.38	10.31	15.76	21.80	36.95
4A	93.27	88.19	84.32	75.12	58.98	6.73	11.81	15.68	24.88	41.02
4B	93.75	88.29	84.01	74.80	55.49	6.25	11.71	15.99	25.20	44.51
5A	93.00	87.37	80.45	71.34	52.85	7.00	12.63	19.55	28.66	47.15
5B	93.88	88.00	80.59	71.00	51.33	6.12	12.00	19.41	29.00	48.67
6A	93.60	86.12	79.60	68.96	49.62	6.40	13.88	20.40	31.04	50.38
6B	93.57	87.05	79.81	68.08	45.08	6.43	12.95	20.19	31.92	54.92
7A	92.30	84.15	75.15	68.62	40.69	7.70	15.85	24.85	31.38	59.31
7B	93.07	84.02	77.89	60.89	42.27	6.93	15.98	22.11	39.11	57.73
8A	92.65	85.15	77.51	61.95	40.45	7.35	14.85	22.49	38.05	59.55
8B	97.12	82.15	74.95	77.60	67.16	2.88	17.85	25.05	22.40	32.84
Total. ....	93.16	87.60	82.15	74.54	52.82	6.84	12.40	17.85	25.46	47.18

The data for this table were computed from the reports to the Committee on School Inquiry, June, 1911.

When the several grades are considered together the highest rate of promotion at the end of the February-June term, 1911, was among children absent ten days and less, the rate of promotion being 93.16 per cent. The rate of promotion was lower for pupils absent eleven to twenty days than for pupils absent ten days and less by 5.56 per cent.; lower for pupils absent twenty-one days to thirty days by 11.01 per cent.; lower for pupils absent thirty-one to forty days by 18.62 per cent.; and lower for pupils absent forty-one days and above by 40.34 per cent.

The same relative effect of absence on promotion is to be observed

<sup>1</sup> See Table XXIV, p. 623; also Table XXXIX, p. 656.

in each of the grades. The promotions out of each hundred pupils on register ranged in the several grades from—

89 to 97	for pupils absent ten days and less,
82 to 90	" " " eleven to twenty days,
75 to 86	" " " twenty-one to thirty days,
60 to 81	" " " thirty-one to forty days,
40 to 67	" " " forty-one and above.

The highest rate of promotion at the end of the February-June term, 1911, in every grade, was, therefore, for pupils absent ten days and less; the rate decreased in every grade with each succeeding period of greater absence, and the lowest rate of promotion in every grade was for pupils absent forty-one days and above.

The difference in the effect of absence on the rate of promotion in the several grades becomes apparent if pupils are grouped according as they were absent twenty days and less, and twenty-one days and more, and the rate of promotion for the two groups is given by grades:

Table XXI

Grades	Rate of Promotion Among Pupils Absent 20 Days and Less	Rate of Promotion Among Pupils Absent 21 Days and More	Rate of Promotion Among Pupils Absent 20 Days and Less Above the Rate of Promotion Among Pupils Absent 21 Days and More
1A.....	88.22	57.52	30.70
1B.....	91.76	77.69	14.07
2A.....	91.42	78.10	13.32
2B.....	92.51	79.44	13.07
3A.....	91.88	76.58	15.30
3B.....	92.87	76.59	16.28
4A.....	92.29	74.89	17.40
4B.....	92.71	73.53	19.18
5A.....	91.89	70.07	21.82
5B.....	92.76	69.88	22.88
6A.....	92.18	68.15	24.03
6B.....	92.39	67.08	25.31
7A.....	90.95	63.81	27.14
7B.....	91.60	64.68	26.92
8A.....	91.56	65.43	26.13
8B.....	95.52	73.25	22.27
Total.....	92.03	70.57	21.46

The effect of absence on the rate of promotion is greatest, it appears, in the 1A grade, being more than twice as great as in the 1B. From the 1B on, the seriousness of absence becomes increasingly greater practically to the 8B. That is, in case a pupil has been absent twenty-one days and more, his chance of promotion decreases with each grade from the 1B to the 8B.

It, therefore, appears, as promotions are made at the end of the February-June term, 1911, with the exception of the 1A grade, absence affected more seriously the rate of promotion in the higher than in the lower grades, and that, in all grades, the rate of promotion varies inversely with the amount of absence.

### 3. Absence as a Factor in Non-Promotion and Congestion

In the group of pupils having the highest per cent. of promotion absence varied from zero to ten days.<sup>1</sup> Hence, so far as our data go, the effect of absence on promotion is least among pupils absent from zero to ten days, and any difference in the rate of promotion in groups absent a longer period may be attributed to the effect of the longer absence.<sup>2</sup> Hence, by making the rate of promotion among children absent from zero to ten days the norm, the effect of absence on promotion may be estimated within reasonable limits.

Table XXII gives the actual number of non-promotions among pupils absent eleven days and above, the number of non-promotions there would have been at the rate of non-promotion for pupils absent from zero to ten days, the decrease in number, and also the per cent. of decrease in the number of non-promotions at the rate of non-promotion for pupils absent from zero to ten days. (See page 617.)

There were, it will be observed, 38,194 non-promotions at the end of the February-June term, 1911, in all grades among pupils absent eleven days and above. Had the same rate of non-promotion prevailed for such pupils as among pupils absent from zero to ten days there would have been but 13,637 non-promotions, a decrease of 24,557, or 64.30 per cent. The largest numerical reduction would have been in the 1A, 5,785; the smallest in the 8B, 522. The lowest per cent. of decrease would have been in the 2A, 51.86 per cent.; the highest in the 8B, 86.14 per cent. Hence, from 51.86 per cent. to 86.14 per cent. of the non-promotions in the several grades and 64.30 per cent. of all non-promotions among pupils absent eleven days and above may be attributed to the effect of absence.

When judged solely in view of promotions as made at the end of the February-June term, 1911, absence appears to be a very large factor in increasing the number of non-promotions, and hence in increasing congestion. The effect of absence is, then, that tens of thousands of children are left back to go over the same work again, to congest the

<sup>1</sup> See Table XX, p. 614.

<sup>2</sup> In attributing differences in rate of promotion to absence, the assumption is, of course, that all other conditions were the same in the several groups of pupils. While this assumption is evidently not exact, the results based on it are significant. Only additional data not now available and further study can determine exactly the precise effect of absence among the other factors determining non-promotion. In any case, it is obvious that prolonged or frequent absence of children from school must affect their promotion unfavorably.

Table XXII

## Non-Promotions Among Pupils Absent Eleven Days and Above.

Grades	Actual Number of Non-Promotions	Number of Non-Promotions at Rate of Promotion for Pupils Absent Zero to Ten Days	Decrease in Number of Non-Promotions at Rate of Promotion for Pupils Absent Zero to Ten Days	Per Cent. of Decrease in Non-Promotions at Rate of Promotion for Pupils Absent from Zero to Ten Days
1A.....	8,501	2,716	5,785	68.05
1B.....	3,571	1,547	2,024	56.68
2A.....	2,397	1,154	1,243	51.86
2B.....	2,180	987	1,193	54.72
3A.....	2,087	892	1,195	57.26
3B.....	2,050	814	1,236	60.29
4A.....	2,063	783	1,280	62.05
4B.....	2,167	741	1,426	65.81
5A.....	2,326	798	1,528	65.69
5B.....	2,150	656	1,494	69.49
6A.....	2,129	623	1,506	70.74
6B.....	1,839	553	1,286	69.93
7A.....	1,749	549	1,200	68.61
7B.....	1,390	411	979	70.43
8A.....	989	329	660	66.73
8B.....	606	84	522	86.14
Total.....	38,194	13,637	24,557	64.30

These data were computed from reports submitted to the Committee on School Inquiry, June, 1911.

already overcrowded lower grades, to increase the amount and degree of retardation, and to add to the cost of the elementary school.

In view of the effect of absence on the child's progress through school the first duty of teachers and principals should be to keep children regular in attendance; and the corresponding responsibility of the department of school attendance is, therefore, very great.

#### 4. Conclusions

The foregoing discussion may be thus summarized:

(1) There were 382,406 pupils, or 67.25 per cent. of the total register as of June 30, 1911, absent from zero to ten days during the February-June term, 1911; 97,512, or 17.15 per cent., absent eleven to twenty days; 39,391, or 6.93 per cent., absent twenty-one to thirty days; 19,297, or 3.39 per cent., absent thirty-one to forty days; and 30,006, or one pupil in each nineteen on register, absent forty-one days and above.

(2) The greatest amount of absence during the February-June term, 1911, was in the 1A grade; this gradually decreased to the 8B, in which grade there was the least absence.

(3) The amount of absence in all grades is large; whether it cannot be greatly reduced is a question worthy of immediate and earnest attention.

(4) With the exception of the 1A grade, absence affected more seriously the rate of promotion in the higher than in the lower grades; and, in all grades, the rate of promotion varies inversely with the amount of absence.

(5) Absence is a very large factor in increasing the number of non-promotions, and hence in increasing congestion.

(6) In view of the effect of absence on the child's progress through the school, the first duty of teachers and principals should be to keep children regular in attendance, and the corresponding responsibility of the department of school attendance is, therefore, very great.

#### IV. Promotion, Non-Promotion, and Over-Age

##### 1. Meaning and Significance of Over-Age

Investigations carried on within the last five years have established two facts: (1) That children in large numbers, either from inclination or from necessity, on becoming fourteen years of age drop out of school permanently; (2) that many of the children leaving the elementary school permanently have not advanced further in the course of study than the fifth or sixth year.

These facts have led to the question of the grade a child of a given age should have completed, providing he is to finish the entire elementary school course of study by a given age. Accordingly, certain age limits have been fixed for entering and for completing each of the grades of the elementary school. Children finishing a grade before the age limit fixed for completing the given grade are termed "under age." Children finishing a grade at the age limit fixed for completing the given grade are termed "normal age." Children finishing a grade at an older age than the age limit fixed for completing the given grade are termed "over-age"—that is, are behind the grade for their age.

Had children an indefinite length of time in which to secure an education, the fact that they are over-age would have no significance. But over-age has significance, because the majority of children have only a limited number of years in which to acquire an education; when these years are spent they must drop from school permanently. Hence, for large numbers of children to fall behind in the elementary school one or more years means, particularly if they have fallen behind because of slow progress after entrance, that they will drop out without completing one or more of the upper grades.

In determining the number of over-age pupils in a school system and the degree of over-age—that is, the length of time children are behind



their grade—much depends on the age-grade standards adopted and on the method employed in making the estimate.

(1) The ages of the children are taken at different times; they are taken at the beginning, the middle, or at the end of the school year.

(2) Different ages are fixed for entering and for completing each grade, and hence for completing the course. The City Superintendent of Schools regards a pupil of normal age who completes the grades of the first year by the time he is eight, and who completes the grades of the eighth year by the time he is fifteen;<sup>1</sup> while others regard the normal upper age limits for completing these grades as seven and fourteen.<sup>2</sup>

(3) Over-age is determined by the normal age of entrance to the grade; also by the normal age of completing the grade to which pupils are promoted at the end of the school year. It will be admitted that it is correct to determine the over-age, if any, of promoted pupils by the normal age *of entrance* to the grade to which they are advanced at the end of the school year. But it will not be admitted that it is correct to determine the over-age, if any, of pupils promoted at the end of the school year by the age fixed *for completing* the grade to which they are advanced: or that it is correct to determine the over-age of pupils not promoted at the end of the school year by the age fixed *for completing* the grade in which they are then registered. To estimate over-age in the last two ways is to give promoted and particularly non-promoted pupils the advantage of the entire normal period for doing the work of a grade, and hence to lessen by one school year or term the recorded over-age of children.

(4) Over-age is determined by the normal age *for completing* the grade in which pupils are registered *before promotion* at the end of the school year. This is the common way of estimating it, but estimates made in this way underrate somewhat the amount of over-age, because the estimate is made as if all pupils had completed the work of the grade, whereas some pupils have not completed it. Hence, to determine the amount of over-age, if any, by the age fixed *for completing* the grade in which children are registered *before promotion* at the end of the school year is practically to lessen the amount of over-age, if any, of all children not promoted by the length of the normal period for doing the work of a grade.

(5) Over-age is determined by the age fixed *for completing* the grade last finished *after promotion* at the end of the school year. When it is thus estimated, the amount of over-age, if any, of promoted pupils is determined by the age fixed for completing the grade from which they have just been advanced, but that of pupils not promoted is determined by the age fixed for completing the grade next lower than the one in which such pupils were registered during the school year and from which they were not advanced.

<sup>1</sup> Report of the City Superintendent of Schools for 1904, p. 47.

<sup>2</sup> Report of Committee on Uniform Records and Reports, Proceedings of N. E. A., 1911, pp. 288-291.

On the foregoing points there is at present no uniformity in practice. Those estimating over-age have not made clear the basis of the age-grade standards adopted or of the several steps in their method, and, as a rule, have not adhered uniformly to one age-grade standard or to one procedure.

It is impossible, with the time at our disposal, to consider the many problems involved in an accurate estimate of over-age. But the essential bases of such an estimate are:

(1) That the ages of the children be taken on the last day of the official school year or half year for which the estimate is made.

(2) That the normal age for completing the elementary school be fixed at fourteen to fourteen and a half, and that the normal period for doing the work of each grade be uniform for the several grades—i. e., one school year or one half year for each grade. Hence, the normal ages for entering and for completing each of the grades are:

	Normal Age of Entrance	Normal Age of Completion
First Grade.....	6 up to $6\frac{1}{2}$	7 up to $7\frac{1}{2}$
Second Grade.....	7 up to $7\frac{1}{2}$	8 up to $8\frac{1}{2}$
Third Grade.....	8 up to $8\frac{1}{2}$	9 up to $9\frac{1}{2}$
Fourth Grade.....	9 up to $9\frac{1}{2}$	10 up to $10\frac{1}{2}$
Fifth Grade.....	10 up to $10\frac{1}{2}$	11 up to $11\frac{1}{2}$
Sixth Grade.....	11 up to $11\frac{1}{2}$	12 up to $12\frac{1}{2}$
Seventh Grade.....	12 up to $12\frac{1}{2}$	13 up to $13\frac{1}{2}$
Eighth Grade.....	13 up to $13\frac{1}{2}$	14 up to $14\frac{1}{2}$

(3) That the over-age, if any, be determined by the age fixed for completing the grade last finished after promotion at the end of the school year, or half year. Hence, the over-age, if any, of promoted pupils is determined by the age fixed for completing the grade from which they have just been promoted, whereas the over-age of pupils not promoted is determined by the age fixed for completing the grade next lower than the grade from which they have just failed to be promoted.

In this report it was impossible, with the data at hand, to do otherwise than to adopt the age-grade standards fixed by the City Superintendent of Schools,<sup>1</sup> and to determine over-age without regard to whether pupils were advanced or not advanced by the age fixed for being in the grade in which pupils were registered before promotion at the end of the term, the method of estimating over-age most commonly used. The ages of children are as of June 30, 1911.<sup>2</sup>

<sup>1</sup> Annual Report of the City Superintendent of Schools for 1904, p. 47.

<sup>2</sup> While the age-grade standards and the ages of the children are the same in both estimates, our estimate of over-age at the end of the February-June term, 1911,

2. Number of Over-Age Pupils in Regular Classes<sup>1</sup>

The number of over-age pupils in the regular classes of elementary schools of the city at the end of the February-June term, 1911, is shown by Table XXIII. This table gives by grades the number of pupils on register June 30, 1911, before promotion, under normal age, of normal age, and over normal age; also the per cent. of the total register of each grade under normal age, of normal age, and over normal age.

Table XXIII

REGISTER IN REGULAR CLASSES AS OF JUNE 30, 1911, BEFORE PROMOTION						
Grades	Number Under Normal Age	Number Normal Age	Number Over Normal Age	Per Cent. of Total Register		
				Below Normal Age	Of Normal Age	Over Normal Age
1A.....	414	36,882	5,716	.96	85.75	13.29
1B.....	516	40,114	9,202	1.03	80.50	18.47
2A.....	828	27,967	10,812	2.09	70.61	27.30
2B.....	835	31,361	12,412	1.87	70.31	27.82
3A.....	1,219	24,339	14,622	3.03	60.57	36.40
3B.....	885	25,839	16,187	2.06	60.22	37.72
4A.....	1,264	19,253	18,056	3.28	49.91	46.81
4B.....	1,029	20,652	18,228	2.58	51.74	45.68
5A.....	1,195	16,981	18,647	3.24	46.12	50.64
5B.....	1,019	17,380	17,636	2.83	48.23	48.94
6A.....	1,352	14,169	17,352	4.11	43.11	52.78
6B.....	1,202	14,515	15,417	3.86	46.62	49.52
7A.....	1,460	12,393	13,814	5.28	44.79	49.93
7B.....	1,168	12,658	10,965	4.71	51.06	44.23
8A.....	1,504	10,660	8,948	7.12	50.49	42.39
8B.....	1,461	10,765	7,319	7.48	55.07	37.45
Total.....	17,351	335,928	215,333	3.05	59.08	37.87

The data for this table were computed from the reports to the Committee on School Inquiry, June, 1911.

differs radically from that of the City Superintendent of Schools for the same term. (See Table XII, p. 579, for his estimate.) Our estimate is much higher than his. Even our estimate is somewhat too low, because the over-age of pupils not promoted is determined by the ages fixed for being in the grade in which such pupils were registered rather than by the ages fixed for completing the grade last finished. The estimate of the City Superintendent of Schools for promoted pupils is based on the ages fixed for being in the grades of the several years to which such children have just been advanced, and, for non-promoted pupils, on the ages fixed for being in the grades of the several years in which such pupils were registered during the term, but from which they failed to be promoted. In a word, the over-age, if any, of all children is judged by him as if they had completed the grade which they have just entered. (Non-promoted pupils have, of course, been in the grade for the term, but for practical purposes are just entering it.) To judge over-age by the method of the City Superintendent is to lessen the recorded number of pupils over-age, and to reduce the length of time pupils are over-age by from a half to an entire school year; to estimate over-age in this way is clearly wrong.

<sup>1</sup>We are concerned here with over-age in regular classes only. We are not concerned with over-age among the 31,430 pupils in special classes at the end of the February-June term, 1911. See Annual Report of the City Superintendent of Schools for 1911, p. 67.

Of the 568,612 pupils on register June 30, 1911, in regular classes, 17,351, or 3.05 per cent., were under normal—ahead of their grade; 335,928, or 59.08 per cent., were normal—up to grade; and 215,333, or 37.87 per cent., were over normal—behind their grade. The smallest number of over-age children was in the 1A grade, 5,716; the number is largest in the 5A, 18,647; while from the 5A the number gradually decreases to 7,319 in the 8B. Correspondingly, the lowest per cent. of over-age is in the 1A, 13.29 per cent.; and the highest 52.78 per cent., in the 6B; then there is a gradual decrease to 37.45 per cent. in the 8B grade.

Fig. 8

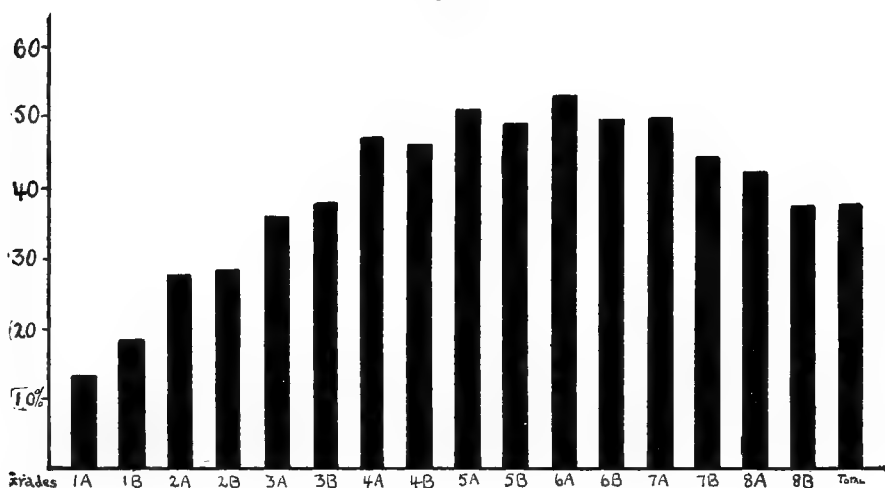


Fig. 8. Black indicates the per cent. of pupils in each grade over-age. (Compare with estimate of City Superintendent of Schools, Fig. 6, p. 580.)

### 3. The Degree of Over-Age

The fact that there were at the end of the February-June term, 1911, in regular classes 215,333 over-age pupils is in itself significant, but the full significance of this fact becomes apparent only in view of the length of the period these pupils are behind their grades. Table XXIV gives by grades the number of pupils over-age under one year, between one and two years, between two and three years, and three years and more; also the per cent. of the total number of over-age pupils in each grade under one year over-age, between one and two years, etc.

Of the 215,333 over-age pupils, 120,618, or 56.01 per cent., are less than one year behind their grade, 62,247, or 28.91 per cent., between one and two years; 22,547, or 10.47 per cent., between two and three years; and 9,921, or 4.61 per cent., three years and more.

Table XXIV

Grades	Total Number Over-Age	Number Over-Age				Per Cent. of Total Number Over-Age			
		Under 1 Year	Between 1 and 2 Years	Between 2 and 3 Years	3 Years and More	Under 1 Year	Between 1 and 2 Years	Between 2 and 3 Years	3 Years and More
1A	5,716	3,942	1,224	305	245	68.96	21.41	5.34	4.29
1B	9,202	6,333	1,892	614	363	68.82	20.56	6.67	3.95
2A	10,812	6,999	2,407	879	527	64.73	22.26	8.13	4.88
2B	12,412	7,641	3,003	1,124	644	61.56	24.19	9.06	5.19
3A	14,622	8,257	4,034	1,402	929	56.47	27.59	9.59	6.35
3B	16,187	8,753	4,405	1,814	1,215	54.07	27.21	11.21	7.51
4A	18,056	9,629	4,894	2,234	1,299	53.33	27.10	12.37	7.20
4B	18,228	9,148	5,300	2,451	1,329	50.19	29.07	13.45	7.29
5A	18,647	8,855	5,910	2,731	1,151	47.49	31.69	14.65	6.17
5B	17,636	8,520	5,748	2,416	952	48.31	32.59	13.70	5.40
6A	17,352	8,785	5,934	2,099	534	50.63	34.20	12.09	3.08
6B	15,417	8,393	5,089	1,647	283	54.44	33.01	10.68	1.87
7A	13,814	8,025	4,440	1,182	167	58.09	32.14	8.56	1.21
7B	10,965	6,788	3,336	719	122	61.91	30.42	6.56	1.11
8A	8,948	5,805	2,565	491	87	64.87	28.67	5.49	.97
8B	7,819	4,745	2,066	439	69	64.83	28.23	6.00	.94
Total.....	215,333	120,618	62,247	22,547	9,921	56.01	28.91	10.47	4.61

The data for this table were computed from the reports to the Committee on School Inquiry, June, 1911.

The largest number of pupils between one and two years over-age is in the 6A grade, 5,934; the number of such pupils decreases with each succeeding grade to 2,066, in the 8B. The largest number of pupils between two and three years over-age is in the 5A, 2,731; the number then falls to 439, in the 8B. The largest number of pupils three years and more over-age is in the 4B grade, 1,329; the number declines with each succeeding grade until there are but sixty-nine such pupils in the 8B grade. It therefore appears that pupils between one and two years over-age drop from school in increasing numbers after the 6B grade; that pupils between two and three years over-age leave after the 5A; and that pupils three and more years over-age find it increasingly difficult to remain in school after the 4B.

Of the total number of over-age pupils in each grade, the per cent. under one year over-age is the highest in the 1A, being 68.96 per cent.; this falls to 47.49 per cent. in the 5A, and then rises to 64.87 per cent. in the 8A. The per cent. between one and two years over-age rises gradually from 20.56 per cent. in the 1B to 34.20 per cent. in the 6A, and then falls to 28.23 per cent. in the 8B. The per cent. between two and three years over-age is the lowest in the 1A, 5.34 per cent.; this rises to 14.65 per cent. in the 5A; and falls to 5.49 per cent. in the 8A. The per cent. three and more years over-age rises from 3.95 per cent. in the 1B to 7.51 per cent. in the 3B, then gradually diminishes to .94 of 1 per cent. in the 8B. Judged by the length of the period pupils are over normal, over-age is, therefore, the least serious in the 1A grade; grows increasingly serious to the 5A-5B grades; and thereafter

gradually declines in seriousness to the 8B, but never becomes less serious than in the 1A grade.

The full significance of 215,333 pupils being over-age lies, therefore, in the fact that, of these 215,333 pupils, 120,618 are behind their grade less than one year; 62,247 between one and two years; 22,547 between two and three years; and 9,921 three years and more, and also in the fact that the tendency among these children—especially among those behind their grade because of failure to be advanced regularly, to fail to complete the work of the elementary school keeps pace with the extent to which they are over-age.

#### 4. Rate of Promotion for Over-Age Pupils

On the assumption that school conditions were the same for both classes of children, a materially lower rate of promotion at the end of the February-June term, 1911, for over-age children than for children of normal age can be attributed to lack of capacity among over-age children, or to home conditions which prevent them from doing their best work, or to both.

Table XXV gives by grades the rate of promotion at the end of the February-June term, 1911, for pupils under normal age, for pupils of normal age, and for over-age pupils:<sup>1</sup>

Table XXV

Rate of Promotion.				
Grades	For Pupils Under Normal Age	For Pupils of Normal Age	For Over-Age Pupils	Rate of Promo- tion for Pupils of Normal Age Over Rate of Promo- tion for Over-Age Pupils
1A.....	53.62	75.69	79.76	-4.07
1B.....	76.36	89.72	85.14	4.58
2A.....	88.04	90.51	85.34	5.17
2B.....	91.02	92.40	85.95	6.45
3A.....	89.42	92.28	85.68	6.60
3B.....	92.09	93.74	85.87	7.87
4A.....	94.62	93.70	85.63	8.07
4B.....	92.91	94.19	85.47	8.72
5A.....	94.91	94.00	83.79	10.21
5B.....	94.70	94.40	84.86	9.54
6A.....	95.56	94.16	84.30	9.86
6B.....	95.76	94.23	84.44	9.79
7A.....	93.56	92.73	83.10	9.63
7B.....	95.12	92.40	84.70	7.70
8A.....	93.68	92.49	85.28	7.21
8B.....	96.92	96.04	91.61	4.43
Total.....	92.24	90.84	85.03	5.81

Data for this table were computed from the reports to the Committee on School Inquiry, June, 1911.

<sup>1</sup> With the data at hand it was impossible to distinguish between pupils over-age because of late entrance, and pupils over-age because of slow progress in school.

The rate of promotion in the 1A grade was lower for children under normal and of normal age than for over-age pupils. The higher rate of promotion for over-age 1A pupils might be due to the fact that, though the native ability of over-age children is less than that of children under normal age and of normal age, the greater maturity of over-age children enables them to do better the work of the 1A. Should investigation prove this to be true, there would be ample grounds for modifying, in favor of children under normal and of normal age, the work of the 1A grade.

In each of the grades 1A-4B, inclusive, with the exception of the 4A, the rate of promotion was higher for normal pupils than for pupils under normal. From the 5B on, however, the higher rate in each grade was for children under normal age. It therefore appears that children under normal age, although they may have greater native ability, do not do as well in the lower grades, as a rule (probably because of immaturity), as pupils of normal age, but that younger pupils (owing doubtless to superior capacity) do better than pupils of normal age in each of the grades from the 5A to the 8B.

With the exception of the 1A grade, the rate of promotion was higher in each grade from 4.43 per cent. to 10.21 per cent. for pupils of normal age than for over-age pupils. By reason of this lower rate of promotion, it would seem that over-age pupils have decidedly less capacity for regular school work than pupils of normal age, or enjoy decidedly less favorable home surroundings, or have both less capacity and less favorable home surroundings. Investigation should be made to determine whether this difference in rate of promotion for normal pupils and for over-age pupils is due to home surroundings or to difference in capacity for regular school work; also to what extent over-age is due to late entrance and to what extent it is due to failure to be regularly promoted.

There is no reason to suppose that the lower rate of promotion prevailing among over-age children was exceptional for the February-June term, 1911. Hence, it would appear that the factors, whether late entrance, lack of capacity, or conditions in the home, or in the school, which cause the child to become over-age continue to operate, with the result that over-age children tend to fall farther and farther behind. The cumulative effect of over-age is shown by the following table. (See page 626.)

Whether the decidedly lower rate of promotion, with the exception of the 1A grade, for over-age pupils, and the decided decrease in the rate of promotion with each increase in the length of the period of over-age, are due to lack of capacity, to home conditions, or to conditions in the school, or to all these factors together, this lower rate is evidence of the wisdom of the special classes ("E" classes) in which special attention and direction are given to over-age pupils; also evidence of the need of increased provisions for over-age children. The 9,921 pupils on register June 30, 1911, three and more years over-age, the 22,547 between two and three years behind their grades, and the 62,247

Number Promoted June 30, 1911, Out of Each One Hundred Pupils on Register.

Grades	Of Normal Age	Under One Year Over Normal	Between 1 and 2 Years Over Normal	Between 2 and 3 Years Over Normal	3 Years and More Over Normal
1A.....	76	79	81	78	84
1B.....	90	85	85	85	87
2A.....	91	86	84	83	84
2B.....	92	87	85	84	82
3A.....	92	87	84	82	81
3B.....	94	88	85	83	82
4A.....	94	88	85	81	79
4B.....	94	88	84	81	79
5A.....	94	88	82	79	74
5B.....	94	88	84	79	72
6A.....	94	88	82	78	71
6B.....	94	88	82	76	79
7A.....	93	85	81	78	74
7B.....	92	86	83	81	84
8A.....	92	87	83	78	79
8B.....	96	93	90	86	88
Total.....	91	87	83	80	79

between one and two years over-age, would certainly profit from special attention. It does not follow, however, that these over-age pupils should all be put in "E" classes which add approximately 50 per cent. to the cost of educating an elementary school pupil. An investigation should be made in each case to determine to what extent over-age is due to late entrance and to what extent it is due to slow progress, that is, to retardation. For it is obvious that the treatment of a group of pupils over-age by reason of late entrance and who have received promotion regularly should be different from the treatment of a group of pupils over-age because of failure to be regularly promoted.

Further, earnest consideration should be given to the question of whether or not large numbers of over-age pupils (over-age merely because of late entrance) and of retarded pupils (over-age because of failure to be promoted) could not be cared for quite as well through segregating them into classes of standard size and adapting the course of study to their abilities and needs<sup>1</sup>, hence without increased expense, as through segregating them into "E" classes as now organized and conducted and increasing the cost by 50 per cent.

##### 5. Over-Age as a Factor in Non-Promotion and Congestion

When over-age is taken as the expression of certain persistent conditions, the extent to which it is a factor in increasing the number of non-promotions, and hence in increasing congestion, is shown by Table

<sup>1</sup> See this report, pp. 597-599.



XXVI. This table gives the actual number of over-age pupils non-promoted, the number that would have been non-promoted at the rate of non-promotion for pupils of normal age, the decrease and also the per cent. of decrease in the number of non-promotions at the rate of non-promotion for pupils of normal age.

Table XXVI

Non-Promotions Among Over-Age Pupils.				
Grades	Actual Number of Non-Promotions	Number of Non-Promotions at Rate of Non-Promotion for Pupils of Normal Age	Decrease in Number of Non-Promotions at Rate of Non-Promotion for Pupils of Normal Age	Per Cent. of Decrease in Non-Promotions at Rate of Non-Promotion for Pupils of Normal Age
1A.....	1,157	1,390	-233	-20.14
1B.....	1,367	946	421	30.80
2A.....	1,585	1,026	559	35.27
2B.....	1,744	943	801	45.93
3A.....	2,094	1,129	965	46.08
3B.....	2,287	1,013	1,274	55.71
4A.....	2,595	1,138	1,457	56.15
4B.....	2,648	1,059	1,589	60.01
5A.....	3,022	1,118	1,904	63.00
5B.....	2,670	988	1,682	63.00
6A.....	2,724	1,013	1,711	62.81
6B.....	2,399	890	1,509	62.90
7A.....	2,335	1,004	1,331	57.00
7B.....	1,678	833	845	50.36
8A.....	1,317	672	645	48.97
8B.....	614	290	324	52.77
Total.....	32,236	15,452	16,784	52.07

The data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911.

Had the rate of non-promotion been the same for over-age pupils as for normal pupils, there would have been a reduction in each grade, with the exception of the 1A, in the number of over-age pupils not promoted. The reduction would have varied from 30.80 per cent. in the 1B to 63 per cent. in the 5B. While there would have been more non-promotions in the 1A by 233, there would have been a total net reduction in non-promotions of 16,784, or 52.07 per cent.—equivalent to one less non-promotion to each thirteen over-age pupils on register. Over-age—as the expression of persistent conditions—is, therefore, an important factor in increasing the number of non-promotions, and hence in increasing the amount of congestion.

## 6. Probable Additional Cost to Provide "E" Classes for Pupils Two and More Years Over-Age

There were, at the end of the February-June term, 1911, 32,468 pupils, on register in regular classes, two and more years behind their grade. To provide "E" classes that these pupils, to say nothing of the 62,247 between one and two years over-age, might receive the special attention needed would require both additional school rooms and additional teachers. On the assumption that these over-age pupils were in classes of forty-five pupils each, and that none of them would be cared for in the "E" classes already organized, and allowing for a register of thirty pupils per "E" class, there would be required 361 additional school rooms and 361 additional teachers. To provide these would involve an investment of approximately \$3,610,000 in new buildings and an annual expense of probably \$70,000 for upkeep and maintenance; also an annual expenditure of \$259,920 for teachers' salaries.<sup>1</sup>

It is probable that certain school rooms not now in use might be used in caring for some of these over-age pupils. To the extent to which this could be done the only added expense in providing "E" classes would be for teachers. Should the Board of Education request funds for buildings and teachers in order to establish "E" classes, an investigation should be made of the number of rooms not now in use that might be used for such classes, also serious consideration should be given to the question of whether or not large numbers of over-age children cannot be provided for better through segregating them into classes of standard size (thus causing no increase in cost) and through adapting the course of study to their abilities and needs than through segregating them into "E" classes as now organized and conducted and increasing the cost.

## 7. Conclusions

The conclusions from the foregoing discussion may be thus summarized:

(1) There were 215,333 over-age pupils in regular classes at the end of the February-June term, 1911, or 37.87 per cent. of all pupils on register in regular classes were behind the grade for their age.

(2) Of the 215,333 over-age pupils, 120,618, or 56.01 per cent., were less than one year over-age; 62,247, or 28.91 per cent., between one and two years; 22,547, or 10.47 per cent., between two and three years; and 9,921, or 4.61 per cent., three years and more.

(3) Pupils between one and two years over-age drop from school in increasing numbers after the 6B grade; those between two and three years over-age begin to leave after the 5B, and those three years and more over-age find it increasingly difficult to remain in school after the 4B grade.

<sup>1</sup> For the basis of these estimates, see this report, note 3, p. 609.

(4) Judged by the length of the period pupils are over normal, over-age is the least serious in the 1A grade; grows increasingly serious to the 5A-5B grades; and thereafter gradually declines in seriousness to the 8B, but never becomes less serious than in the 1A grade.

(5) In each of the grades 1A-4B, inclusive, with the exception of the 4A, the rate of promotion was higher for normal pupils than for pupils under normal age. From the 5B on, however, the higher rate in each grade was for pupils under normal age.

(6) With the exception of the 1A grade, the rate of promotion was higher in each grade from 4.43 per cent. to 10.21 per cent. for pupils of normal age than for over-age pupils.

(7) When over-age is viewed as the expression of the lack of ability among children, or of the failure of the school to adapt its requirements to the abilities of pupils, or of unfavorable home conditions, or of these and other factors together, over-age is cumulative; that is, over-age children tend to fall farther and farther behind.

(8) Over-age is a decided factor in increasing the number of non-promotions, and hence increasing the amount of congestion.

(9) In view of conditions as they existed in regular classes at the end of the February-June term, 1911, and on the assumption that no more over-age pupils can be cared for in the "E" classes already organized, and that there are no rooms not now in use that could be used for this purpose, to provide "E" classes for pupils two and more years behind their grade only would require, for additional school rooms and for additional teachers, an investment of approximately \$3,610,000 in new buildings and an annual expenditure of probably \$70,000 for upkeep and maintenance; also an annual minimum expenditure of \$259,920 for teachers' salaries.

(10) We recommend:

- (a) That classes in which special attention and direction are given to over-age pupils be provided at least for all pupils two and more years behind their grade.
- (b) That an investigation be made of the pupils now in "E" classes to determine to what extent the over-age of the pupils in these classes is due to late entrance and to what extent it is due to slow progress or retardation; and to determine to what extent the pupils in the classes are classified and the instruction given is determined according as they are over-age because of late entrance or slow progress.
- (c) That before additional "E" classes are organized serious consideration be given to the question of whether or not large numbers of over-age children cannot be provided for better through segregating them into classes of standard size (hence causing no increase in cost) and through adapting the course of study to their abilities and needs than through seg-

- regating them into "E" classes as now organized and conducted and increasing the cost.
- (d) That data be collected and so reported that it will not only be possible to determine the exact amount of over-age, but to determine to what extent over-age is due to late entrance and to what extent it is due to slow progress or retardation.

## V. Promotion, Non-Promotion and Inability to Use the English Language

There are thousands of pupils enrolled in the elementary schools of the City of New York who are foreign born, or who are of foreign-born parentage. To a large proportion of these children the English language is essentially a foreign language. Classes have been organized—"C" classes—to give special help to such children, to the end that they may more quickly acquire a working knowledge of the English language and be prepared, at an early date, to take their place in regular classes. Despite the help given by "C" classes,<sup>1</sup> there are pupils in regular classes who, in the opinion of the teachers, have such difficulty in understanding and in using the English language that this interferes with their progress through the school.

### I. Number of Pupils in Regular Classes Unable to Use the English Language

The number of pupils in regular classes as of June 30, 1911, whose inability to use the English language was, in the opinion of teachers, interfering with their school progress is shown by Table XXVII. This table gives by grades the number of pupils unable to use the English language, the per cent. of the register of each grade unable to use the English language, also the per cent. of all such pupils in each grade.

It will be observed that there were 8,739 pupils, or 1.54 per cent. of the total register in regular classes, whose inability to use the English language was such, in the opinion of the teachers, as to interfere with their school work. Of these 8,739 pupils unable to use the English language, over one-half—55.87 per cent.—were in the 1A and 1B grades (3,648, or 41.74 per cent., in the 1A and 1,235, or 14.13 per cent. in the 1B); in the 1A-3B grades together there were 6,986, or 79.94 per cent. The remaining 1,753, or 20.06 per cent., were in the grades 4A-8B, ranging from 354, or 4.05 per cent., in the 4A to eleven, or .13 of 1 per cent., in the 8B grade. It will be observed that the per cent. of the total register unable to use the English language is the highest in the 1A grade, being 8.48 per cent., and that the per cent. decreases from 2.48 per cent. in the 1B to .06 of 1 per cent. in the 8B.

<sup>1</sup> 2,689 pupils were on register in "C" classes June 30, 1911. Annual Report of the City Superintendent of Schools for 1911, p. 67.

Table XXVII

Grades	Total Register in Regular Classes as of June 30, 1911	Number of Pupils Unable To Use the English Language	Per Cent. of the Register of Each Grade Unable to Use the English Language	Per Cent. of All Pupils Unable to Use the English Language in Each Grade	Cumulative Per Cent.
1A.....	43,012	3,648	8.48	41.74	41.74
1B.....	49,832	1,235	2.48	14.13	55.87
2A.....	39,607	649	1.64	7.43	63.30
2B.....	44,608	556	1.25	6.36	69.66
3A.....	40,180	475	1.18	5.44	75.10
3B.....	42,911	423	.99	4.84	79.94
4A.....	38,573	354	.92	4.05	83.99
4B.....	39,909	404	1.01	4.62	88.61
5A.....	36,823	388	1.05	4.44	93.05
5B.....	36,035	232	.64	2.65	95.70
6A.....	32,873	165	.50	1.89	97.59
6B.....	31,134	46	.15	.53	98.12
7A.....	27,667	48	.17	.55	98.67
7B.....	24,791	85	.34	.97	99.64
8A.....	21,112	20	.09	.23	99.87
8B.....	19,545	11	.06	.13	100.00
Total.....	568,612	8,739	1.54	.....	.....

Data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911.

## 2. Effect of Inability to Use the English Language on Rate of Promotion

The number of pupils in each grade unable to use the English language is, therefore, relatively small. Hence, whatever the rate of promotion for such pupils, this would affect but slightly the rate of promotion for the grade as a whole. Just what the effect of the presence of such pupils in regular classes was on the rate of promotion for the grade as a whole at the end of the February-June term, 1911, is shown by Table XXVIII. This table gives by grades the rate of promotion at the end of the February-June term, 1911, for pupils able to use the English language; the rate of promotion in regular classes (includes both pupils able and pupils unable to use the English language); and the difference in the rate of promotion in regular classes due to the presence of pupils unable to use the English language. (See page 632.)

Had there been no pupils in regular classes unable to use the English language the rate of promotion at the end of the February-June term, 1911, would have been somewhat higher in every grade. It would have been higher in the 1A by 1.54 per cent.; in the 1B by .42 of 1 per cent.; and higher in the remaining grades by from .03 of 1 per cent. to .20 of 1 per cent. Such differences—even that in the 1A grade—are very small. Hence, the presence of pupils in regular classes unable to

Table XXVIII

Grades	Rate of Promotion for Pupils Able to Use the English Language	Rate of Promotion in Regular Classes— Includes Both Pupils Able and Unable To Use the English Language	Difference in Rate of Promotion in Regular Classes Due to the Presence of Pupils Unable to Use the English Language
1A.....	77.56	76.02	1.54
1B.....	89.16	88.74	.42
2A.....	89.24	89.04	.20
2B.....	90.76	90.58	.18
3A.....	89.92	89.79	.13
3B.....	90.85	90.74	.11
4A.....	90.07	89.95	.12
4B.....	90.30	90.18	.12
5A.....	88.97	88.86	.11
5B.....	89.77	89.74	.03
6A.....	89.08	89.02	.06
6B.....	89.50	89.44	.06
7A.....	88.02	87.96	.06
7B.....	89.20	89.12	.08
8A.....	89.56	89.52	.04
8B.....	94.48	94.45	.03
Total.....	88.99	88.68	.31

Data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911

use the English language had no material effect on the rate of promotion at the end of the February-June term, 1911, for the grade as a whole.

### 3. Rate of Promotion for Pupils Able and for Pupils Unable to Use the English Language

Nevertheless, inability to use the English language materially affects the school progress of those children who are unable to use the English language. This will be seen, if the rate of promotion for pupils able to use the English language is compared with the rate of promotion for pupils unable to use it.

Table XXIX gives by grades the rate of promotion at the end of the February-June term, 1911, for pupils able to use the English language; the rate of promotion for pupils unable to use the English language; also the difference in the rate of promotion in favor of pupils able to use the English language.

The rate of promotion at the end of the February-June term, 1911, for pupils able to use the English language was higher, it will be observed, in every grade, from 4.49 per cent. to 58.12 per cent., than for pupils unable to use the English language. The greatest difference in the rate of promotion for these two classes of children was in certain of

Table XXIX

Grades	Rate of Promotion for Pupils Able to Use the English Language	Rate of Promotion for Pupils Unable to Use the English Language	Difference in Rate of Promotion in Favor of Pupils Able to Use the English Language
1A.....	77.56	59.10	18.46
1B.....	89.16	72.06	17.10
2A.....	89.24	77.81	11.43
2B.....	90.76	76.62	14.14
3A.....	89.92	79.16	10.76
3B.....	90.85	79.43	11.42
4A.....	90.07	76.84	13.23
4B.....	90.30	78.22	12.08
5A.....	88.97	78.35	10.62
5B.....	89.77	84.48	5.29
6A.....	89.08	76.36	12.72
6B.....	89.50	52.17	37.33
7A.....	88.02	54.17	33.85
7B.....	89.20	84.71	4.49
8A.....	89.56	55.00	34.56
8B.....	94.48	36.36	58.12
Total.....	88.99	69.05	19.94

The data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911.

the higher grades. By reason of the number of pupils affected, the smaller difference in the lower grades is, however, more significant. When measured by the difference in the rate of promotion, inability to use the English language seriously interferes, therefore, in regular classes, with the child's chances of promotion, lessening his chances from 4.49 per cent. to 58.12 per cent.

The decidedly lower rate of promotion for pupils unable to use the English language is evidence of the wisdom of special classes ("C" classes) for the instruction of such children; and the number of such children at the end of the February-June term in the regular classes, particularly of the 1A-3B grades—6,986—indicates that the number of "C" classes should be greatly increased. It also emphasizes the necessity of providing a flexible course of study so that, where there is need, additional time may be devoted in regular classes to giving children a working knowledge of the English language.

#### 4. Probable Additional Cost to Provide "C" Classes for Pupils Unable to Use the English Language

There were at the end of the February-June term, 1911, 3,648 pupils in regular classes of the 1A grade unable to use the English language. To provide "C" classes that these pupils, to say nothing of the 5,091 in the other grades, might receive the special attention they need would require both additional school rooms and additional teachers. On the

assumption that these 1A pupils were in classes of forty-five pupils each, and allowing thirty pupils per "C" class, there would be required, providing there are no rooms not now in use that could be used for this purpose, forty additional school rooms and forty additional teachers. To provide these would involve an investment of approximately \$400,000 in new buildings, and an annual expenditure of probably \$10,000 for upkeep and maintenance, and an annual minimum of \$56,800 for teachers' salaries.<sup>1</sup>

### 5. Inability to Use the English Language as a Factor in Non-Promotion and in Congestion

The actual effect on the number of non-promotions of the lower rate of promotion for pupils unable to use the English language is shown by Table XXX. This table gives by grades the number of non-promotions among pupils unable to use the English language, the number of non-promotions there would have been among such pupils at the rate of non-promotion for pupils able to use the English language, also the decrease and the per cent. of decrease in the number of non-promotions among such pupils at the rate of non-promotion for pupils able to use the English language:

Table XXX

Non-Promotion Among Pupils Unable to Use the English Language.				
Grades	Actual Number of Non-Promotions	Number of Non-Promotions at Rate of Non-Promotion for Pupils Able to Use the English Language	Decrease in Number of Non-Promotions at Rate of Promotion for Pupils Able to Use the English Language	Per Cent. of Decrease in Non-Promotion at Rate of Non-Promotion for Pupils Able to Use the English Language
1A.....	1,481	819	662	44.70
1B.....	345	134	211	61.16
2A.....	144	70	74	51.39
2B.....	130	51	79	60.77
3A.....	99	48	51	51.52
3B.....	87	39	48	55.17
4A.....	82	35	47	57.32
4B.....	88	39	49	55.68
5A.....	84	43	41	48.81
5B.....	36	24	12	33.33
6A.....	39	18	21	53.85
6B.....	22	5	17	77.27
7A.....	22	6	16	72.73
7B.....	30	9	21	70.00
8A.....	9	2	7	77.78
8B.....	7	1	6	85.71
Total.....	2,705	1,343	1,362	50.35

The data for this table were computed from the reports made to the Committee on School Inquiry June, 1911.

<sup>1</sup> For the basis of these estimates, see this report, note 3, p. 609.



Had the rate of non-promotion been the same as for pupils able to use the English language there would have been, among pupils unable to use the English language, a decrease in every grade in the number of non-promotions. The decrease would have varied from six in the 8B to 662 in the 1A, and the per cent. of decrease would have ranged from 33.33 per cent. to 85.71 per cent.; while, in all the grades together, there would have been 1,362 fewer non-promotions, or a decrease of 50.35 per cent.—the equivalent of one less non-promotion to each six pupils on register unable to use the English language.

When viewed in relation to the number of pupils involved, inability to use the English language is, therefore, a decided factor in increasing the number of non-promotions, but, because of the relatively small number of such children, it contributes very slightly in the lower and probably not at all in the upper grades to congestion.

## 6. Conclusions

The foregoing discussion is summarized in the following conclusions:

(1) There were in regular classes at the end of the February-June term, 1911, 8,739 pupils whose inability to use the English language was such, in the opinion of teachers, as to interfere with their school work. Over one-half, 55.87 per cent., were in the 1A and 1B grades; 3,648, or 41.74 per cent., in the 1A and 1,235, or 14.13 per cent., in the 1B. In the 1A-3B grades together there were 6,986, or 79.94 per cent. The remaining 1,753, or 20.06 per cent., were in the grades 4A-8B, ranging from 354, or 4.05 per cent., in the 4A to eleven, or .13 of 1 per cent., in the 8B.

(2) The presence of pupils in the regular classes of a grade unable to use the English language had no material effect, at the end of the February-June term, 1911, on the rate of promotion for the grade as a whole.

(3) But the rate of promotion for pupils able to use the English language was higher in each of the grades, from 4.49 per cent. to 58.12 per cent., than for pupils unable to use the English language.

(4) In view of the number of pupils in regular classes at the end of the February-June term, 1911, unable to use the English language, to provide "C" classes for such pupils in the 1A grade only would require, providing there are no rooms not now in use that could be used for this purpose, an investment of approximately \$400,000 in new buildings, an annual expenditure of probably \$10,000 for upkeep and maintenance, and an annual minimum of \$56,800 for teachers' salaries.

(5) When viewed in relation to the number of pupils involved, inability to use the English language is a decided factor in increasing the number of non-promotions, but, because of the relatively small number

of such children, it contributes to congestion only slightly in the lower and probably not at all in the upper grades.

(6) Although the presence of pupils in regular classes unable to use the English language, because of the relatively small number of such pupils, does not affect the rate of promotion for a grade as a whole or add materially to congestion, inability to use the English language does affect decidedly the school progress of those pupils who are unable to use the English language. Hence, we recommend:

- a. That "C" classes—classes for the instruction of pupils unable to use the English language—be provided at once, at least for all pupils in the 1A grade unable to use the English language.
- b. That the course of study be made so flexible that, where there is need, additional time may be devoted in regular classes to aiding children to acquire a working knowledge of the English language.

## VI. Promotion, Non-Promotion, and Part-Time

### 1. Meaning of Whole-Time and Part-Time

Owing to the chronic lack of sufficient school rooms there have developed in the elementary schools of the city two kinds of classes—whole-time classes and part-time classes. Children in whole-time classes are in school the standard day—five hours; hence each whole-time class requires one school room. Children in part-time classes are in school but three hours and three-quarters;<sup>1</sup> hence two part-time classes are accommodated in one room on the same day. By putting large numbers of children on part-time it has been possible to provide, in a way, for all the children admitted to the elementary schools of the city.

### 2. Conditions Giving Rise to Part-Time

In addition to the increase in register, three policies of the Board of Education (all to be highly commended) have contributed to make the number of pupils (68,610) on part-time June 30, 1911, larger than the number (35,347) on part-time June 30, 1902: (1) The policy inaugurated in 1903 of admitting to school all children of school age. Prior to 1903 when a school was full the principal might, at his discretion, refuse admission. In consequence, there was in nearly every school in crowded districts a waiting list. It was not uncommon for a child to be on this list a half year and even a whole year. (2) The policy of reducing "classes of enormous and irrational sizes"—classes having from one hundred to one hundred and fifty pupils; also of reducing the register of all regular classes to fifty and less. (3) The policy of providing special

<sup>1</sup> Manual of the Board of Education, Sec. 45, 10; p. 59.

classes for over-age, backward, and defective children.<sup>1</sup> Part-time, as it now exists in the city, is, therefore, not only the result of the continued failure to provide adequate school accommodations for the increase in register, but also to provide adequate accommodations to carry into effect the educational policies of the Board of Education.

### 3. Different Attitudes Toward Part-Time

The school authorities have, as a rule, looked with favor on part-time as a means of doing, under adverse conditions, the most for the greatest number of school children; but have regarded part-time in itself as an evil which should be abolished whenever school accommodations became adequate to give each child a full day's schooling of the kind best suited to his needs.

The cost of providing modern school accommodations, the presence at times of part-time classes even in the sixth grade, and differences of opinion among theorists on the proper length of the school day for young children have led some persons to believe that, while part-time is an evil in the upper grades, it is preferable to whole-time in the two lowest grades; and hence, on both economic and educational grounds, should be made universal in the 1A and 1B grades. That is, it is maintained by some persons that the standard school day for all children in the 1A and 1B grades should be three and a half hours; and the time of attending school so arranged that one school room will accommodate two classes—one class to attend in the forenoon only, the other in the afternoon only.<sup>2</sup>

### 4. Part-Time at the End of the February-June Term, 1911

The number of pupils in part-time classes at the end of the February-June term, 1911, and hence the number affected by part-time, is given in Table XXXI. This table gives by grades the total register before promotion in the regular classes of the elementary school as of June 30, 1911, the register in whole-time classes, and the per cent. of the total register in whole-time classes; also the register in part-time classes, the per cent. of the total register in part-time classes, and the per cent. of all part-time pupils in the classes of each grade. (See page 638.)

The register in the regular classes of the elementary school before promotion June 30, 1911, was 568,612. Of these pupils, 500,002, or 87.93 per cent., were in whole-time classes, and 68,610, or 12.07 per cent. were in part-time classes—the equivalent of one pupil out of each eight on part-time. It will be observed that there were no part-time classes above the 6B grade; also that the number on part-time in the 6B

<sup>1</sup> Annual Report of the City Superintendent of Schools for 1905, pp. 53-55; also for 1911, p. 47.

<sup>2</sup> See Annual Report of the City Superintendent of Schools, 1904, p. 78.

Table XXXI

Grades	Total Register in Regular Classes as of June 30, 1911	Register in Whole-Time Classes as of June 30, 1911	Per Cent. of the Total Register in Whole-Time Classes June 30, 1911	Register in Part-Time Classes as of June 30, 1911	Per Cent. of the Total Register in Part-Time Classes June 30, 1911	Per Cent. of All Part-Time Pupils in Each Grade	Cumulative Per Cent.
1A.....	43,012	26,110	60.71	16,902	39.29	24.64	24.64
1B.....	49,832	34,056	68.34	15,776	31.66	22.99	47.63
2A.....	39,607	30,377	76.70	9,230	23.30	13.45	61.08
2B.....	44,608	36,301	81.38	8,307	18.62	12.11	73.19
3A.....	40,180	34,487	85.83	5,693	14.17	8.30	81.49
3B.....	42,911	37,868	88.25	5,043	11.75	7.35	88.84
4A.....	38,573	35,320	91.57	3,253	8.43	4.74	93.58
4B.....	39,909	37,568	94.13	2,341	5.87	3.41	96.99
5A.....	36,823	35,624	96.74	1,199	3.26	1.75	98.74
5B.....	36,035	35,357	98.12	678	1.88	.99	99.73
6A.....	32,873	32,727	99.56	146	.44	.21	99.94
6B.....	31,134	31,092	99.87	42	.13	.06	100.00
7A.....	27,667	27,667	100.00	.....	.....	.....	.....
7B.....	24,791	24,791	100.00	.....	.....	.....	.....
8A.....	21,112	21,112	100.00	.....	.....	.....	.....
8B.....	19,545	19,545	100.00	.....	.....	.....	.....
Total.....	568,612	500,002	87.93	68,610	12.07	.....	.....

The data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911.

Fig. 9

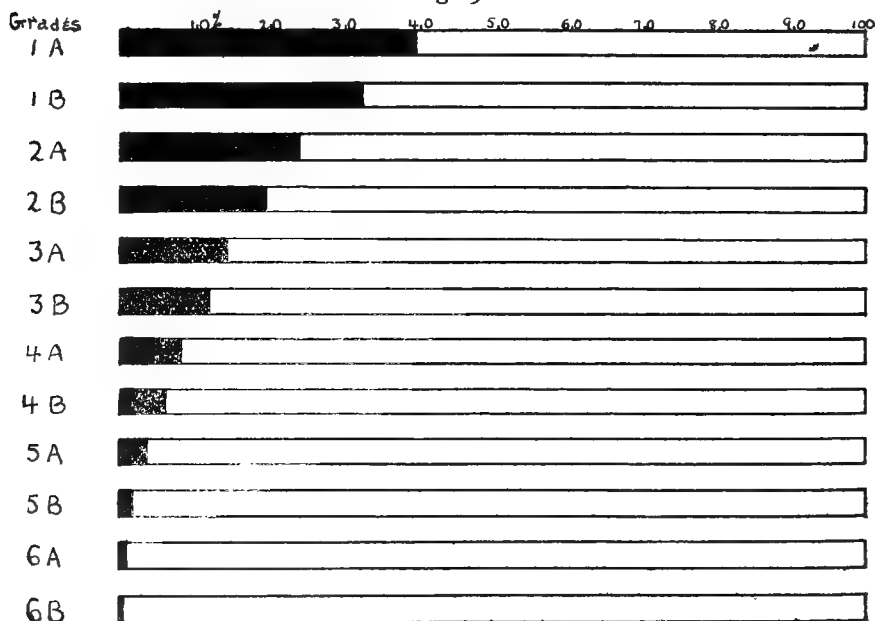


Fig. 9. Black indicates the per cent. of the register of each grade on part-time.

and 6A grades was small; hence it may be said that, at the end of the February-June term, 1911, part-time was confined to the 5B and lower grades.

Of all the pupils in the 1A grade, 16,902, or 39.29 per cent., were in part-time classes; in the 1B 15,776, or 31.66 per cent.; in the 2A 9,230, or 23.30 per cent.; in the 2B 8,307, or 18.62 per cent.; in the 3A 5,693, or 14.17 per cent.; in the 3B 5,043, or 11.75 per cent.; in the 4A 3,253, or 8.43 per cent.; in the 4B 2,341, or 5.87 per cent.; in the 5A 1,199, or 3.26 per cent.; and in the 5B 678, or 1.88 per cent. (See Fig. 9.)

Of all the pupils on part-time, 24.64 per cent. were in the 1A grade; 22.99 per cent. in the 1B; 13.45 per cent. in the 2A; 12.11 per cent. in the 2B; 8.30 per cent. in the 3A; 7.35 per cent. in the 3B; 4.74 per cent. in the 4A; 3.41 per cent. in the 4B; 1.75 per cent. in the 5A; and .99 of 1 per cent. in the 5B; or 88.84 per cent. of all part-time pupils were in the 1A-3B grades.

Fig. 10

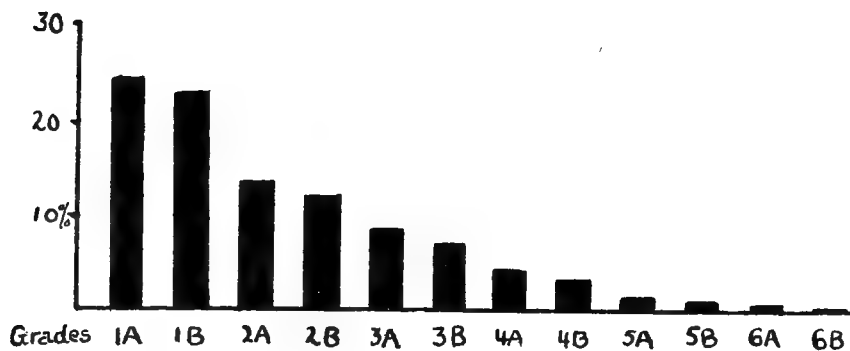


Fig. 10. Black indicates the per cent. of all part-time pupils in each grade.

Part-time pupils were distributed at the end of the Feb.-June term, 1911, among the several boroughs as follows:

Boroughs	Number of Children on Part-Time June 30, 1911	Per Cent. of Total Register on Part-Time June 30, 1911	Per Cent. of Total Number on Part-Time in Each Borough
Manhattan.....	14,318	6.18	20.87
The Bronx.....	16,907	26.15	24.64
Brooklyn.....	31,683	14.80	46.18
Queens.....	5,615	12.15	8.18
Richmond.....	87	.74	.13
Total.....	68,610	12.07	.....

### 5. The Elimination of Part-Time

Of the part-time pupils on register June 30, 1911, 35,932 were in the grades above the 1B. Hence, to have eliminated part-time from the grades above the 1B only, as has been proposed by some, accommodations would have been needed to care for 35,932 children. There were on register June 30, 1911, in the whole-time classes of the 1A and 1B grades, 60,166 children. Had these 60,166 whole-time pupils been put on part-time, as some advocate, sufficient rooms would in theory have been freed thereby to accommodate the half of 60,166, or 30,083 pupils. With this number of additional rooms rendered available, theoretically, a large proportion of part-time classes could have been eliminated in the February-June term, 1911, from the grades above the 1B.<sup>1</sup> What is true in theory of this term would probably hold true for other terms. That is, theoretically, by universalizing part-time in the 1A and 1B grades it would be possible to eliminate the major portion of all part-time from the grades above the 1B. In practice, however, part-time is found in congested districts in the 1A and 1B grades; hence to universalize part-time in the 1A and 1B grades would result merely in increasing the number of pupils on part-time in the city as a whole in these grades, but would doubtless have little effect in reducing the number of pupils on part-time in the grades above the 1B. It might also help to lessen part-time, and hence the cost of its elimination, if the Board of Education would publish monthly in what districts and schools there are ample accommodations, and in what districts and schools there is congestion.

Since there were 68,610 children on part-time at the end of the February-June term, 1911, to have eliminated all part-time from all grades school accommodations would have been required to care for 34,305 pupils.<sup>2</sup> To provide school accommodations for 34,305 pupils, allowing forty-five pupils per room, would require an investment in buildings of not less than \$7,620,000, besides the cost of upkeep and maintenance, probably \$150,000 annually.<sup>3</sup> This estimate merely indicates, of course, what it would cost to provide 34,305 seats for the corresponding number of part-time pupils. To provide this number of seats would, however, not necessarily eliminate part-time as of June 30th, 1911; the seats must be where the children are, hence, to eliminate part-time as it existed June 30th, 1911, would doubtless cost much more than

<sup>1</sup> To put the 35,932 part-time pupils above the 1B in whole-time classes, all 1A and 1B pupils (92,844) would have to be put in part-time classes; hence there would have been 92,844 pupils on part-time at the end of the February-June term, 1911, instead of 68,610. Or, to eliminate part-time in the grades above the 1B, by universalizing part-time in the 1A and 1B grades, would increase the total number of children on part-time by approximately 50 per cent.

<sup>2</sup> Two part-time classes use one room; hence to have a room for each class, additional rooms would need to be provided for one-half of the pupils on part-time (68,610) or for 34,305 pupils.

<sup>3</sup> For the basis of these estimates, see this report, note 3, p. 609.

the foregoing estimated sum. What it would actually cost is impossible to estimate.<sup>1</sup>

## 6. Questions Involved in Part-Time

The questions involved in part-time may be thus stated: Do the best interests of children demand that each child, in whatever grade, shall enjoy a whole day's schooling, and hence that the foregoing sum be spent in eliminating part-time? Or can the interests of children be equally well conserved by universalizing part-time in the 1A and 1B grades, thereby doing away with it above the 1B grade and saving that sum to the city? Or are the best interests of children conserved by permitting them, as now, to be in part-time classes one or more terms in the grades below the 7A? In a word, is part-time an evil in all grades? Or is it an evil only above the 1B grade? Or does it do children in the elementary school no harm to be on part-time one term or more?

A definite answer to these questions would require an investigation exceeding the means and the time at the disposal of the present inquiry. It would need to consider the problem from at least three points of view—the physical, the educational, and the social or ethical. It would be necessary, among other things, (1) to measure the effect of the two kinds of classes on the health and physical development of children; (2) to examine the school achievements of the children in each kind of class; and (3) to study the differences in the interests, habits, and conduct of children in school the whole day (five hours) and of children in school only a part of the day (three hours and three-quarters).

With the time and means at our disposal it has been possible, in addition to holding conferences with principals and teachers, to collect data on but one phase of the educational aspect of the problem—the rate of promotion in the two kinds of classes.

## 7. Rate of Promotion in Whole-Time and in Part-Time Classes

Table XXXII gives by grades, both for whole-time classes and for part-time classes, the per cent. of the register as of June 30, 1911, promoted and the per cent. not promoted; also the per cent. of promotion in whole-time classes over or under the per cent. of promotion in part-time classes. (See page 642.)

In the twelve grades in which there were both whole and part-time classes it will be observed that the rate of promotion in whole-time classes was higher than in part-time classes in nine and lower in three grades. The rate of promotion was lower in whole-time classes in the 4A, the 4B, and in the 6B grades, and higher in the 1A-3B, the 5A, the 5B, and in the 6A grades. The largest difference was in the 6A, where 4.78

<sup>1</sup> Since each part-time class has its teacher, the question of additional teachers is not involved either in the continuance or the elimination of part-time.

Table XXXII

Grades	Whole-Time Classes		Part-Time Classes		Per Cent. of Promotion in Whole-Time Classes Over or Under Per Cent. of Promotion in Part-Time Classes
	Per Cent. of Register as of June 30, 1911, Promoted	Per Cent. of Register as of June 30, 1911, Not Promoted	Per Cent. of Register as of June 30, 1911, Promoted	Per Cent. of Register as of June 30, 1911, Not Promoted	
1A.....	76.96	23.04	74.56	25.44	2.40
1B.....	88.87	11.13	88.45	11.55	.42
2A.....	89.29	10.71	88.24	11.76	1.05
2B.....	90.86	9.14	89.39	10.61	1.47
3A.....	89.87	10.13	89.34	10.66	.53
3B.....	90.84	9.16	90.03	9.97	.81
4A.....	89.91	10.09	90.32	9.68	— .41
4B.....	90.16	9.84	90.43	9.57	— .27
5A.....	88.94	11.06	86.32	13.68	2.62
5B.....	89.74	10.26	89.38	10.62	.36
6A.....	89.03	10.97	84.25	15.75	4.78
6B.....	89.45	10.55	90.48	9.52	— 1.03
7A.....	87.97	12.03	.....	.....	.....
7B.....	89.12	10.88	.....	.....	.....
8A.....	89.52	10.48	.....	.....	.....
8B.....	94.44	5.56	.....	.....	.....

The data for this table were computed from the reports to the Committee on School Inquiry, June, 1911.

per cent. more pupils were promoted in whole-time classes than in part-time classes. A difference in the rate of promotion in the lower grades is, however, more significant than in the higher grades, because 88.84 per

Table XXXIII

Grades	Register in Part-Time Classes as of June 30, 1911	Number in Part-Time Classes Promoted June 30, 1911	Number in Part-Time Classes Who Would Have Been Promoted at the Rate in Whole-Time Classes	Increase in Number That Would Have Been Promoted at the Rate in Whole-Time Classes
1A.....	16,902	12,602	13,008	406
1B.....	15,776	13,954	14,020	66
2A.....	9,230	8,145	8,241	96
2B.....	8,307	7,426	7,548	122
3A.....	5,693	5,086	5,116	30
3B.....	5,043	4,540	4,581	41
4A.....	3,253	2,938	2,925	— 13
4B.....	2,341	2,117	2,111	— 6
5A.....	1,199	1,035	1,066	31
5B.....	678	606	608	2
6A.....	146	123	130	7
6B.....	42	38	38	0
Total.....	68,610	58,610	59,392	782 (Net Increase)

The data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911.



cent. of all part-time pupils are in the 1A-3B grades,<sup>1</sup> and in each of these grades the rate of promotion was lower in part-time than in whole-time classes.

The significance of the higher rate of promotion in whole-time classes than in the part-time classes in nine out of twelve grades is clearly seen if the actual number of pupils promoted in part-time classes is compared with the number that would have been promoted had the rate of promotion, grade for grade, been the same in part-time as in whole-time classes.

Table XXXIII gives by grades the register in part-time classes as of June 30, 1911, the number in part-time classes promoted, June 30, 1911, and the number that would have been promoted at the rate in whole-time classes; and also the difference between the last two numbers.

Had the rate of promotion been the same in the part-time classes of the 1A grade as it was in the whole-time classes of this grade the number of part-time promotions would have been increased, it will be observed, by 406; in the 1A-3B grades, which contain 88.84 per cent. of all part-time pupils, by 731; and in part-time classes as a whole there would have been a net increase of 782. That is, the lower rate of promotion prevailing in part-time classes resulted in the 1A grade in one less promotion to each forty-one 1A pupils; in the 1A-3B grades in one less promotion to each eighty-three pupils in these grades; and in part-time classes as a whole in one less promotion to each eighty-seven part-time pupils. Rate of promotion taken by itself is not a satisfactory measure of school achievements, because, as stated above, promotions are at times made for other reasons than that pupils are prepared for the work of the next grade—i. e., because of the crowded conditions of a school. Hence, there is no reason to believe that the school achievements of pupils promoted in part-time classes were higher by reason of the lower rate than the achievements of pupils promoted in whole-time classes. Indeed, since part-time indicates congestion, and congestion may tend to "forced" promotions, it is quite probable that the achievements of the pupils promoted in part-time classes were not higher, to say the least, than the achievements of pupils promoted in whole-time classes.

Although the foregoing facts would, therefore, indicate that the opportunities for work, and hence for promotion, when judged solely on the basis of the difference in rate of promotion at the end of the February-June term, 1911, were only slightly less favorable in part-time than in whole-time classes, the physical, the educational, and social questions involved in judging of the relative merits of these two kinds of classes, the custom in the other cities of the country of making every effort to provide school accommodations for an all-day school for all elementary school children, and the strong demand in the community that each child, whatever his grade, have a whole day's schooling, justify

<sup>1</sup> See Table XXXI, p. 638.

the Board of Education in demanding the funds to eliminate part-time from all grades. But should the Board of Education request the funds to eliminate part-time from all the grades, the Board of Estimate and Apportionment in view of the foregoing facts would be justified in requesting of the Board of Education an investigation of the physical, educational and social problems involved in determining the relative merits of part-time and whole-time classes to the end that a definite policy with regard to school accommodations may be fixed upon and carried out.

### 8. Part-Time as a Factor in Non-Promotion and Congestion

The lower rate of promotion prevailing at the end of the February-June term, 1911, in part-time classes resulted, as we have seen, in but 782 less promotions out of a total of 68,610 part-time pupils than would have been the case had the rate of promotion been the same as in whole-time classes.<sup>1</sup> Hence, the *direct effect* of part-time on promotions, as promotions were made at the end of the February-June term, 1911, was small. There may, however, be certain important *indirect effects*, such as indifference to school work, bad conduct, and truancy, which affect materially the future progress of children. These possible indirect effects of part-time should be thoroughly investigated.

If part-time was a small factor in increasing the number of non-promotions at the end of the February-June term, 1911, it was a still smaller factor in contributing to congestion. At most, owing to the lower rate of promotion prevailing in part-time classes, there were but 782 additional pupils left in the several grades to augment the numbers in these grades in September. There is every reason to believe that these 782 additional pupils, distributed as they were among nine different grades, were all absorbed without the formation of a single additional class and without materially adding to the numbers in any one class.

Part-time, therefore, when judged solely in view of promotions as they were made at the end of the February-June term, 1911, is but a slight factor in increasing the number of non-promotions, and probably had no effect on increasing congestion.

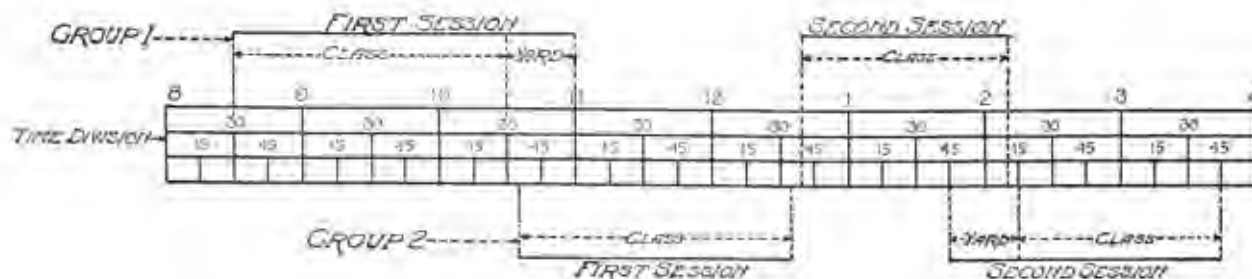
### 9. Kinds of Part-Time Classes

In the foregoing discussion the rate of promotion at the end of the February-June term, 1911, in part-time classes has been contrasted with the rate of promotion in whole-time classes; hence, part-time classes have been treated as a whole—that is, as if there were but one kind. There are, however, four different kinds of part-time classes: A. M. part-time classes, P. M. part-time classes, alternating part-time classes, and “Ettinger” part-time classes.

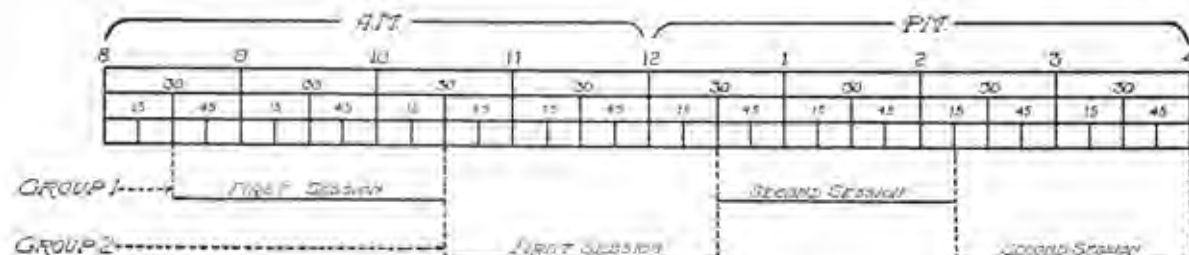
In A. M. part-time classes pupils attend school for at least a term in the forenoon only; in P. M. part-time classes for at least a term in the

<sup>1</sup> See Table XXXIII, p. 642.



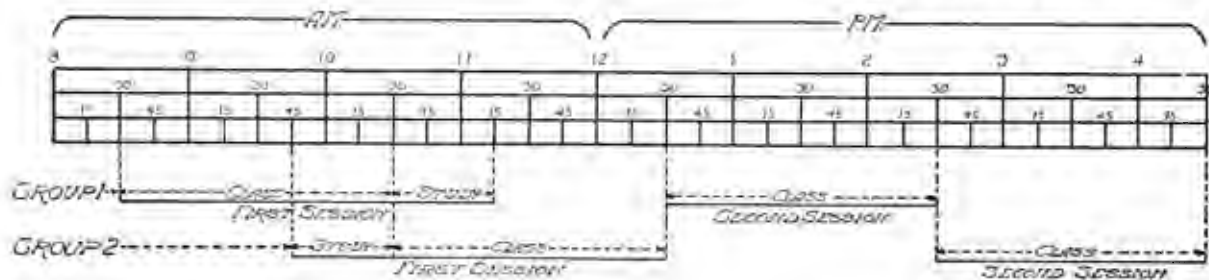


	FIRST SESSION	SECOND SESSION	TOTAL
GROUP 1	2 1/2 hrs.	1 1/2 hrs.	4 hrs.
GROUP 2	2 1/2 hrs.	2 1/2 hrs.	5 hrs.



## II

ETTINGER PLAN TO REDUCE PART-TIME, TO BE APPLIED  
TO DEPARTMENTAL CLASSES, OR CLASSES OF THE LAST  
TWO YEARS OF THE COURSE, IN SCHOOLS HAVING PLAY-  
GROUNDS AND AUDITORIUMS MAY, 1904.



## Present Plan.

Time division under full time instruction.

9 A. M. to 12 A. M. First Session.

12 A. M. to 1 P. M. Intermission.

1 P. M. to 3 P. M. Second Session.

Total time of instruction, five hours, less 15 minutes daily for Assembly; 4 hours and 45 minutes.

## Ettinger Plan.

Time Division under proposed part time plan.

## First Group of Classes.

First Session, 8:30 to 11:15 (10:30 to 11:15, Study and Physical Training in yard). 11:15 to 12:30 (Intermission).

Second Session, 12:30 to 2:30.

Total time of instruction 4 hours and 45 minutes.

## Second Group of Classes.

First Session, 10:30 to 12:30; 12:30 to 1:45 (Intermission).

Second Session, 1:45 to 4:30 (1:45 to 2:30 Study and Physical Training in Yard).

Total time of instruction 4 hours and 45 minutes.

## How to Apply the Plan.

Every modern school building has a well lighted and well heated playground which can be fitted with tables and folding chairs such as are now in every reading centre in our public schools. First determine how many classes this playground will accommodate for purposes of study and physical training. Suppose it will accommodate ten classes for such purposes. The twenty most advanced classes may then be placed on the time division proposed, thus releasing more than 1,000 children from part time at once, while at the same time the upper grades are afforded their full complement of instruction. If this is done in every school where there are proper playground facilities, Dr. Ettinger maintains that the greater number of children now on part time can be placed on full time.



afternoon only; while in alternating part-time classes pupils attend a part of a term in the forenoon only and a part of a term in the afternoon only.

The length of the school day in these three kinds of part-time classes varies from three hours and three-quarters to four hours. When the day is three hours and three-quarters in length A. M. part-time classes begin work at 8.30 and stop at 12.15; P. M. part-time classes begin at 12.30 and continue to 4.15. When the school day is four hours the time is divided thus: A. M. part-time classes, 8.15 to 12.15, and P. M. part-time classes, 12.15 to 4.15. The hours are the same for alternating part-time classes, but the forenoon classes alternate with the afternoon classes. These changes from forenoon to afternoon and from afternoon to forenoon are made in some schools at the end of each fourth week, and in others at the end of each ten weeks.

While three hours and three-quarters to four hours is the length of the school day in these three kinds of part-time classes, pupils in each kind, falling behind and in need of special help, are brought back for an hour to an hour and a quarter for individual instruction. Children in A. M. part-time classes return in the afternoon and children in P. M. part-time classes come in the forenoon. Any available nook or corner of the school building is used for this individual work. In this way a considerable number of the children in these three kinds of part-time classes not only receive a whole day's schooling (five hours), but receive a considerable amount of personal attention.<sup>1</sup>

Ettinger part-time classes are distinguished from A. M., P. M., and alternating part-time classes by the fact that in Ettinger part-time classes the school day is practically five hours in length. Children in Ettinger part-time classes are not under actual instruction five hours per day, but they are under the influence of the school for that length of time daily. This is accomplished by alternating each two classes between a classroom and the "yard."<sup>2</sup> When one class is receiving instruction in the classroom the other is in the "yard," where they have play, physical training, and drill—particularly in the three R's. Each class is thus kept under educative direction the whole day (five hours).<sup>3</sup>

The following is an illustrative daily time schedule for two Ettinger part-time classes:

First Class		Second Class	
8:30 — 10:	Classroom	9:30 — 10:	Yard
10: — 10:45	Yard	10: — 10:45	Classroom
10:45 — 11:45	Classroom	10:45 — 11:45	Yard
11:45 — 12:45	Noon Recess	11:45 — 12:45	Classroom
12:45 — 1:45	Classroom	12:45 — 1:45	Noon Recess
1:45 — 2:30	Yard	1:45 — 3:30	Classroom

<sup>1</sup> Manual of Board of Education, Section 45, Paragraph 12, p. 60.

<sup>2</sup> Yard is the term used in New York City to designate that portion of the first floor of a school building which serves as an assembly place for children prior to the opening of school and for play and physical training.

<sup>3</sup> As the yard takes the place of a classroom for a part of the school day, it is obvious that Ettinger part-time classes are to be found only in schools having yards.

The reasons principals prefer one kind of part-time to another kind are revealed in the following quotations taken from special reports from principals to this Committee:

"I do not believe in alternating the time . . . because it leads to irregular habits of living, both in sleeping and eating. The boys are best in the morning, when they come clean and not all tired out with hard play. I find that the mothers let the girls sleep later for the afternoon work, and they, too, come clean and rested."

"Part-time boys are held to better attendance and less truancy, from homes where the mother is employed, by attendance in the morning classes. If on the street during the forenoon it is hard for the mothers to find the boys at 11.30 for luncheon and prepare them for school."

"The midterm alternation I have tried thoroughly and found impracticable because of the interference with the formation of habits of punctuality. It is almost impossible to secure regular attendance and a habit of being on time if every ten weeks the time to come changes. It also makes serious trouble for the parents."

"We aim to alternate them (classes) each term. Any more frequent change is troublesome to the home domestic arrangements for luncheon, work hours, etc. Many of the mothers are washerwomen or otherwise employed . . . and frequent changes discommode them very much."

"I believe, in order to be just to every part-time pupil, it is necessary so to distribute the period of instruction that no classes or group of classes will receive instruction during an entire term only in the afternoon, when physical and mental rhythm are at greater or less ebb. Pupils who report in the afternoon are generally tired because of a morning's play on the streets. They are less receptive than those who come in the morning."

#### 10. Number of Pupils in Each Kind of Part-Time Class

The distribution at the end of the February-June term, 1911, of part-time pupils among the several kinds of part-time classes is shown by Table XXXIV. This table gives by grades the register and the per cent. of all part-time pupils on register June 30, 1911, in Ettinger part-time classes; also the same facts for alternating part-time classes, for A. M. part-time classes, and for P. M. part-time classes.

The 68,610 pupils on part-time June 30, 1911, were distributed as follows: 5,723, or 8.34 per cent., in Ettinger part-time classes; 43,939, or 64.04 per cent., in alternating part-time classes; 9,461, or 13.79 per cent., in A. M. part-time classes; and 9,487, or 13.83 per cent., in P. M. part-time classes. The part-time pupils in each of the grades 1A-3B were distributed in about the same proportion among the different kinds of part-time classes. It will be noted also that there were no pupils in Ettinger part-time classes above the 4A grade, that the per cent. of all part-time pupils of each grade in alternating part-time classes decreases

in each of the grades above the 4A, and that there is a corresponding increase in the per cent. in these grades in A. M. and in P. M. part-time classes.

If, therefore, the different kinds of part-time are arranged in view

Table XXXIV

Part-Time Classes									
Grades	Total Register as of June 30, 1911	Ettinger Part-Time Classes		Alternating Part-Time Classes		A. M. Part-Time Classes		P. M. Part-Time Classes	
		Register as of June 30, 1911	Per Cent. of Total Number of Part-Time Pupils in Ettinger Classes	Register as of June 30, 1911	Per Cent. of Total Number of Part-Time Pupils in Alternating Classes	Register as of June 30, 1911	Per Cent. of Total Number of Part-Time Pupils in A. M. Classes	Register as of June 30, 1911	Per Cent. of Total Number of Part-Time Pupils in P. M. Classes
1A	16,902	1,526	9.03	10,693	63.26	2,246	13.29	2,437	14.42
1B	15,776	1,755	11.12	10,111	64.09	1,651	10.47	2,259	14.32
2A	9,230	927	10.04	5,836	63.23	1,147	12.43	1,320	14.30
2B	8,307	552	6.64	5,747	69.18	1,155	13.91	853	10.27
3A	5,693	370	6.50	3,765	66.13	850	14.93	708	12.44
3B	5,043	335	6.64	3,389	67.20	771	15.29	548	10.87
4A	3,253	258	7.93	2,056	63.20	559	17.19	380	11.68
4B	2,341	.....	.....	1,431	61.13	501	21.40	409	17.47
5A	1,199	.....	.....	516	43.04	333	27.77	350	29.19
5B	678	.....	.....	291	42.92	205	30.24	182	26.84
6A	146	.....	.....	62	42.47	43	29.45	41	28.08
6B	42	.....	.....	42	100.00	.....	.....	.....	.....
Total....	68,610	5,723	8.34	43,939	64.04	9,461	13.79	9,487	13.83

The data for this table were computed from the reports to the Committee on School Inquiry, June 30, 1911.

of the total number of pupils in each kind June 30, 1911, the order would be as follows:

Alternating Part-Time Classes.

P. M. Part-Time Classes.

A. M. Part-Time Classes.

Ettinger Part-Time Classes.

This same order also holds, with slight exceptions, for each of the grades.

## II. Rate of Promotion in A. M. and in P. M. Part-Time Classes

Principals are generally agreed that better educational results are obtained in A. M. part-time classes than in P. M. part-time classes. Table XXXV gives by grades the rate of promotion in A. M. and in P. M. part-time classes at the end of the February-June term, 1911; also the rate of promotion in A. M. part-time classes over or under the rate of promotion in P. M. part-time classes. (See page 648.)



Table XXXV

Grades	Rate of Promotion in A. M. Part-Time Classes	Rate of Promotion in P. M. Part-Time Classes	Rate of Promotion in A. M. Part-Time Classes Over or Under Rate of Promotion in P. M. Part-Time Classes
1A.....	78.85	72.34	6.51
1B.....	89.40	88.36	1.04
2A.....	85.79	86.51	— .72
2B.....	87.36	90.50	— 3.14
3A.....	90.58	88.70	1.88
3B.....	89.75	88.69	1.06
4A.....	89.62	87.89	1.73
4B.....	90.02	86.80	3.22
5A.....	82.28	86.00	— 3.72
5B.....	90.73	87.36	3.37
6A.....	81.40	78.05	3.35
Total.....	86.13	83.99	2.14

The rate of promotion was higher, it will be observed, in A. M. part-time classes in all grades, with the exception of the 2A, the 2B, and the 5A, than in P. M. part-time classes, varying from 6.51 per cent. in the 1A to 1.04 per cent. in the 1B; also the total rate in A. M. part-time classes was higher than in P. M. part-time classes by 2.14 per cent. It therefore appears that A. M. part-time classes afford more favorable opportunities for advancement than P. M. part-time classes, and hence, on the assumption that conditions of instruction and standards of promotion were the same in the two kinds of part-time classes—a legitimate assumption—A. M. part-time classes are preferable to P. M. part-time classes.

It is thus possible to compare the rate of promotion in A. M. and in P. M. part-time classes and to judge of the relative efficiency of these two kinds of part-time; but it is impossible to compare the rate of promotion in A. M. part-time classes and in P. M. part-time classes separately with the rate of promotion in whole-time classes or in alternating and in Ettinger part-time classes.

The conditions which give rise to part-time require that one room accommodate two classes. Hence, that there may be classes which attend school for a term in the forenoon only, there must also be classes which attend school for a term in the afternoon only. A. M. and P. M. part-time classes are, therefore, inseparably connected; they are two parts of a whole and one part cannot exist without the other. Consequently, A. M. and P. M. part-time classes must be combined and viewed as one kind of part-time if comparisons are made between the relative efficiency of whole-time classes and different kinds of part-time classes.

**12. Rate of Promotion in Whole-Time and in Each Kind of Part-Time Class**

Table XXXVI gives by grades<sup>1</sup> the number out of each one hundred pupils on register promoted June 30, 1911, in whole-time classes, in Ettinger part-time classes, in alternating part-time classes, and in A. M. and P. M. part-time classes combined:

**Table XXXVI**

Grades	Number Promoted June 30, 1911 Out of Each 100 on Register in Whole-Time Classes	Number Promoted June 30, 1911 Out of Each 100 on Register in Ettinger Part- Time Classes	Number Promoted June 30, 1911 Out of Each 100 on Register in Alternating Part- Time Classes	Number Promoted June 30, 1911 Out of Each 100 on Register in A. M. and P. M. Part-Time Classes Combined
1A.....	77	78	74	75
1B.....	89	91	88	89
2A.....	89	92	89	86
2B.....	91	91	89	89
3A.....	90	92	89	90
3B.....	91	95	90	89
4A.....	90	97	90	89
4B.....	90	..	92	89
5A.....	89	..	89	84
5B.....	90	..	90	89

The data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911.

**(1) Whole-Time and Ettinger Part-Time Classes**

It will be observed that one more pupil out of each hundred was promoted in the 1A grade in Ettinger part-time classes than in whole-time classes; in the 1B two more; in the 2A three more; in the 3A two more; in the 3B four more; and in the 4A seven more. In the 2B the number promoted was the same in the two kinds of classes. With this one exception, more pupils were promoted in Ettinger part-time classes in each grade in which there were such classes than were promoted in whole-time classes in the same grades.

Judged solely by rate of promotion, Ettinger part-time classes appear to be preferable to whole-time classes. But part of the difference in rate of promotion in favor of Ettinger part-time classes may be due to the difference in the number of pupils on register. There were, for example, in 1A whole-time classes, 26,115 pupils and in 1A Ettinger part-time classes 1,526; in 3B whole-time classes 37,868, and in 3B Ettinger part-time classes 370. Also part of this difference in rate of promotion might

<sup>1</sup>There were only sixty-two pupils in the 6A and forty-two in the 6B grades in alternating part-time classes, and only eighty-four pupils in the 6A and none in the 6B of A.M. and P.M. part-time classes combined; hence these grades have been omitted from this table. See this report, Table XXXIV, p. 647.

be due to the influence of congestion. Further, rate of promotion throws no light upon the relative educational superiority of these two kinds of classes. To determine their relative superiority would require an extensive investigation, among other things, of the educational achievements, of the punctuality and regularity of attendance, of the school conduct, and of the health of the children in these two kinds of classes. Hence, Ettinger part-time classes cannot be declared preferable to whole-time classes merely on the ground of a higher rate of promotion for the February-June term, 1911.

## **(2) Whole-Time and Alternating Part-Time Classes**

If the promotions in whole-time and alternating part-time classes are compared, it will be observed (a) that in only one grade, the 4B, was the number of pupils promoted per hundred in alternating part-time classes higher than the number promoted in whole-time classes; (b) that the rate of promotion in the 2A, 4A, 5A, and 5B grades was the same; and (c) that, in each of the grades 1A-3B (with the exception of the 2A, as noted above), containing 90 per cent. of all the children in alternating part-time classes, the number of pupils promoted per hundred was less than in whole-time classes. Hence, when judged solely on the basis of the rate of promotion at the end of the February-June term, 1911, alternating part-time classes afford less favorable opportunities for advancement than whole-time classes.

## **(3) Whole-Time and A. M. and P. M. Part-Time Classes**

Further, it will be observed, that, in two grades, the 1B and the 3A, the number of pupils promoted per hundred in A. M. and P. M. part-time classes combined is the same as in whole-time classes, but that in all other grades the number promoted per hundred pupils is less. Hence, the opportunities for advancement in A. M. and P. M. classes combined are less favorable than in whole-time classes.

## **(4) Ettinger Part-Time and Alternating, and A. M. and P. M. Part-Time Classes**

Since the rate of promotion was higher at the end of the February-June term, 1911, in Ettinger part-time classes than in whole-time classes, and the rate of promotion was lower both in alternating part-time classes and in A. M. and P. M. part-time classes combined, it follows that the rate of promotion was higher in Ettinger part-time classes than in either of the two other kinds of part-time classes. Hence, Ettinger part-time classes afford more favorable conditions for advancement than either alternating or A. M. and P. M. part-time classes.

Considering the higher rate of promotion in Ettinger part-time classes, also the fact that in these classes children are under the influence

of the school the whole day (five hours), and the favorable experience of teachers and principals with these classes, we are of the opinion that the Board of Education should insist, when part-time is necessary, that principals establish, wherever possible, Ettinger part-time classes.<sup>1</sup> At least this should be done until further investigation into the efficiency of the different kinds of part-time affords evidence that it is better to do otherwise.

### (5) Alternating and A. M. and P. M. Part-Time Classes

Finally, it remains to consider the relative efficiency of alternating and A. M. and P. M. part-time classes. Table XXXVII gives by grades the register as of June 30, 1911, in A. M. and P. M. part-time classes combined, the actual number promoted, the number that would have been promoted had the same rate of promotion prevailed in A. M. and P. M. part-time classes as in alternating part-time classes; also the increase in number that would have been promoted at the rate of promotion in alternating part-time classes:

Table XXXVII

Grades	Register as of June 30, 1911 in A. M. and P. M. Part-Time Classes Com- bined	Actual Number Promoted June 30, 1911 in A. M. and P. M. Part-Time Classes Com- bined	Number That Would Have Been Promoted at Rate in Alternating Part-Time Classes	Increase in Number That Would Have Been Promoted at the Rate in Alternating Part-Time Classes
1A.....	4,683	3,534	3,452	—82
1B.....	3,910	3,472	3,434	—38
2A.....	2,467	2,126	2,184	58
2B.....	2,008	1,781	1,797	16
3A.....	1,558	1,398	1,384	—14
3B.....	1,319	1,178	1,184	6
4A.....	939	835	846	11
4B.....	910	806	833	27
5A.....	683	575	609	34
5B.....	387	345	347	2
6A.....	84	67	76	9
Total.....	18,948	16,117	16,146	29 (Net Increase)

The data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911.

Table XXXVII shows that, had the rate of promotion been the same in A. M. and P. M. part-time classes as in alternating part-time classes, eighty-two less pupils would have been promoted in the 1A grade; thirty-eight less in the 1B; and fourteen less in the 3A; whereas fifty-eight more would have been promoted in the 2A; sixteen more in the 2B;

<sup>1</sup> Ettinger part-time classes can, of course, only be introduced in schools having suitable yards.

and eighty-nine more in the grades 3B-6A; or, in all grades combined, there would have been a net increase of only twenty-nine additional promotions out of 18,948 pupils. There is, therefore, no practical difference between the rate of promotion in alternating and in A. M. and P. M. part-time classes combined.

It will, however, be remembered that the rate of promotions in A. M. part-time classes, when considered separately from P. M. part-time classes, was found to be considerably higher in all but two grades than in P. M. part-time classes.<sup>1</sup> Hence, the disadvantages of part-time fall most heavily on those pupils who attend school for a term in the afternoon only. A. M. part-time classes and P. M. part-time classes are alternated—that is, pupils who attend one term in the forenoon only attend the following term, as a rule, in the afternoon only. The disadvantages of attending in the afternoon only are thus somewhat equalized. There is, however, no assurance that a pupil on part-time one term will be on part-time the next; hence, no assurance that the disadvantages suffered by attending school one term in the afternoon only will be equalized by attendance the following term in the forenoon only. In view, therefore, not only of the slight difference in the rate of promotion in favor of alternating part-time classes, but also in view of the probability of a more equitable distribution of the disadvantages of part-time in such classes, we are inclined to believe that alternating part-time classes are to be preferred to A. M. and P. M. part-time classes.

### 13. Conclusions

The conclusions from the foregoing discussion may be summarized as follows:

(1) There were, at the end of the February-June term, 1911, 68,610 pupils in part-time classes—the equivalent of one pupil out of each eight on register. 16,902, or 24.64 per cent., were in the 1A grade; 15,776, or 22.99 per cent., in the 1B; 9,230, or 13.45 per cent., in the 2A; 8,307, or 12.11 per cent., in the 2B; and the remaining 18,395, or 26.81 per cent., were in the grades 3A-6B.

(2) The rate of promotion at the end of the February-June term, 1911, was higher in whole-time classes than in part-time classes in nine out of the twelve grades in which there were both kinds of classes, but, had the higher rate of promotion in whole-time classes prevailed in part-time classes, the number of promotions in part-time classes would have been increased by only 782.

(3) Part-time, so far as our data go, is but a very slight factor in increasing the number of non-promotions, and probably augments congestion not at all.

(4) The rate of promotion at the end of the February-June term, 1911, was not only higher in Ettinger part-time classes than in whole-

<sup>1</sup> See Table XXXV, p. 648.

time classes, but higher than in any other kind of part-time class. For this reason, and also because pupils in Ettinger part-time classes are under the influence of the school for five hours daily, the Board of Education may well insist, when part-time is necessary, that principals establish, wherever possible, Ettinger part-time classes.

(5) The rate of promotion differs little in alternating and in A. M. and P. M. part-time classes combined, but, since the disadvantages of part-time are probably more equally distributed in alternating than in A. M. and P. M. part-time classes, alternating part-time classes are preferable to A. M. and P. M. part-time classes.

(6) Considering the difference in rate of promotion in favor of whole-time classes, the physical, the educational, and the social questions involved in judging of the relative merits of whole-time and part-time classes, the custom in other cities of the country of making every effort to provide accommodations for an all-day schooling for all elementary school pupils, the strong demand in the community that each child, whatever his grade, have a whole day's schooling, and the legal and social right of each child to a whole day's schooling, the Board of Education is justified in attempting to eliminate part-time from all the grades. But should the Board of Education request the funds to eliminate part-time from all the grades, the Board of Estimate and Apportionment, in view of the differences of opinion and questions involved, would be justified in requesting of the Board of Education an investigation into the relative merits of whole and part-time classes, to the end that a definite policy with regard to school accommodation may be fixed on and carried out.

## VII. Pupils Leaving the Elementary School<sup>1</sup>

### I. Failure to Collect Data on Pupils Leaving School

In all of the foregoing discussions the pupils on register at the end of the term only have been considered. But the register at the end of the term does not include the thousands of pupils, exclusive of transfers, who have been on register and who have left before the end of the term.

The By-Laws of the Board of Education provide that "the principal of each school shall keep a record which shall contain the names of all pupils dropped from the school register, with a statement of the reason therefor."<sup>2</sup> But no report has ever been made for the city as a whole

<sup>1</sup> Leaving is used to include pupils who leave school temporarily and also pupils who leave permanently.

<sup>2</sup> Manual of the Board of Education, Section 45, 2a, pp. 57-58.

on the number of pupils leaving the elementary schools during a term or a school year and on the reasons therefor.

## 2. Number of Pupils Leaving During February-June Term, 1911

Table XXXVIII<sup>1</sup> gives the number of pupils, by sexes, leaving the regular classes of each grade during the February-June term, 1911; also by sexes the per cent. of the total enrollment in the regular classes of each grade leaving:

Table XXXVIII

Grades	Number of Pupils Leaving Regular Classes Feb.-June Term, 1911			Per Cent. of Total Enrollment in Regular Classes Leaving		
	Boys	Girls	Total	Boys	Girls	Total
1A	1,245	1,219	2,464	5.38	5.46	5.42
1B	1,128	1,066	2,194	4.27	4.16	4.22
2A	816	810	1,626	3.85	4.04	3.94
2B	831	818	1,649	3.56	3.57	3.56
3A	745	732	1,477	3.55	3.55	3.55
3B	703	768	1,471	3.17	3.46	3.31
4A	651	727	1,378	3.22	3.68	3.45
4B	726	725	1,451	3.47	3.54	3.51
5A	788	813	1,601	4.07	4.26	4.17
5B	1,141	1,050	2,191	6.07	5.40	5.73
6A	1,409	1,250	2,659	7.93	7.03	7.48
6B	1,456	1,212	2,668	8.52	7.25	7.89
7A	1,611	1,444	3,055	10.60	9.30	9.94
7B	1,247	1,225	2,472	9.30	8.85	9.07
8A	955	923	1,878	8.52	7.83	8.17
8B	405	356	761	4.05	3.45	3.75
Total.....	15,857	15,138	30,995	5.26	5.07	5.17

The data for this table were computed from reports made to the Committee on School Inquiry, June, 1911.

Fifteen thousand eight hundred and fifty-seven (15,857) boys and 15,148 girls, a total of 30,995, or 5.17 per cent. of the total enrollment,<sup>2</sup> dropped from the regular classes of the elementary schools during the February-June term, 1911; or one pupil in each twenty enrolled in regular classes left school before the end of the term. The number leaving the several grades varied from 761, or 3.75 per cent. of the total enrollment, in the 8B grade, to 3,055, or 9.94 per cent., in the 7A.

From the 1A to the 5A the per cent. of boys leaving was slightly lower than the per cent. of girls leaving, whereas, from the 5B on, the reverse was true. Taking the several grades together there was, however, little difference between the losses among boys, 5.26 per cent., and

<sup>1</sup> These data have to do with pupils leaving regular classes only. Pupils dropping from special classes are not included.

<sup>2</sup> Total enrollment is the sum of the register at the end of the term plus all pupils, exclusive of transfers, leaving before the end of the term.

the losses among girls, 5.07 per cent., a difference of but .19 of 1 per cent. in favor of girls.

### 3. Ages and Grades of Pupils Leaving School

Whether pupils leaving school are out temporarily or permanently depends largely on the grade they are in and on their age at leaving. Table XXXIX gives by grades the number of pupils leaving the regular classes at each of the several ages: under six, six to seven, etc.; also the total number leaving at each age, and the per cent. leaving at each age of the total number dropping out. (See page 656.)

The number of pupils leaving the regular classes at each of the several ages from six to seven up to thirteen to fourteen, inclusive, is quite uniform, varying from 1,843 (12 to 13) to 2,515 (7 to 8), or from 5.95 per cent. to 8.11 per cent. of the total number leaving. The losses from fourteen to fifteen were the largest, 6,312, or 20.37 per cent. The number dropping out from fifteen to sixteen was likewise large, 4,571, or 14.75 per cent., as was also the number from sixteen to seventeen, 2,381, or 7.68 per cent.

Seventeen thousand, three hundred and twelve (17,312), or 55.84 per cent. of the pupils leaving regular classes, were under fourteen. Of these, 2,190 were less than seven years of age and were, therefore, not of compulsory school age; 15,122 were, however, between seven and fourteen, and, in consequence, were subject to the Compulsory Education Law; 13,683, or 44.16 per cent., were fourteen and above. Of these, 822 were between fourteen and sixteen, and were also in the grades 1A-5A, hence could not qualify for labor certificates; the remaining 12,861 were, however, free, by reason of their age and their grade, to drop from school permanently. 15,944 (15,122 plus 822), or 51.44 per cent. of those leaving regular classes, were, therefore, subject to the Compulsory Education Law, and 2,190 were under compulsory school age. Hence, of the 30,995 pupils leaving during the February-June term, 1911, 18,134 (15,944 plus 2,190), or 58.51 per cent., will doubtless, in most part return to school; but that 15,944 pupils of compulsory school age dropped from school during a single term is a serious matter and investigation should be made as to what extent these pupils had legal reasons for being out of school, and to what extent their being out was due to inefficiency on the part of the Department of Compulsory Attendance.

### 4. Effects on Reports of Taking No Account of Pupils Leaving

The fact that no account is taken of the thousands of pupils leaving school leads to a defect in certain of the reports of the City Superintendent of Schools. A report on the number of pupils in the elementary schools of each of the several ages—under five, five to six, etc.—will



Table XXXIX

Age	Grade																Per Cent of Total Number Leaving at Each Age	
	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	8A	8B		Tota
Under 6 Years.....	45	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	50	16
6 to 7.....	1,512	570	43	12	2	...	...	...	...	...	...	...	...	...	...	...	2,140	6.90
7 to 8.....	662	970	281	43	397	177	30	...	...	...	...	...	...	...	...	...	2,515	8.11
8 to 9.....	177	430	591	613	436	445	258	117	41	...	...	...	...	...	...	...	2,425	7.82
9 to 10.....	42	140	262	412	294	361	373	374	209	94	...	...	...	...	...	...	2,164	6.98
10 to 11.....	14	45	99	183	174	168	235	293	318	313	248	132	75	...	...	...	2,093	6.75
11 to 12.....	8	16	48	74	169	107	173	232	249	276	183	121	70	23	...	...	1,955	6.31
12 to 13.....	...	8	19	30	69	107	160	143	232	293	308	297	237	211	23	...	1,843	5.95
13 to 14.....	...	2	4	22	42	36	65	99	243	643	1,038	1,137	1,299	953	131	38	2,127	6.86
14 to 15.....	...	4	4	4	7	20	45	80	177	420	583	683	930	775	603	234	6,312	20.37
15 to 16.....	...	3	4	6	8	20	31	72	128	179	262	253	379	378	420	239	4,571	14.75
16 to 17.....	...	1	2	8	8	8	31	72	128	179	262	253	379	378	420	239	2,381	7.68
17 to 18.....	...	...	...	...	...	1	4	7	...	16	23	28	54	68	87	62	358	1.16
Over 18.....	...	...	...	...	...	...	...	...	...	13	1	2	6	8	20	11	61	2.20
Total.....	2,464	2,194	1,626	1,649	1,477	1,471	1,378	1,451	1,601	2,191	2,650	2,668	3,055	2,472	1,878	761	30,995	.....

The data for this table were computed from the reports made to the Committee on School Inquiry, June, 1911.

illustrate this defect. Table XL gives the number of pupils in the elementary school on register June 30, 1911, of each of the several ages—under five, five to six, etc.; the number of each age, together with the pupils leaving regular classes during the February-June term, 1911; also the number of pupils of each age leaving regular classes.

Table XL

Elementary Schools			
Ages	(1) <sup>1</sup> Number of Pupils of Each Age on Register June 30, 1911	(2) <sup>2</sup> Number of Pupils of Each Age on Register, June 30, 1911, Including Pupils Leaving Regular Classes During the Feb.-June Term, 1911	(3) Number of Pupils of Each Age Leaving Regular Classes Not Accounted for in Column 1
18 and Over.....	104	165	61
17 to 18.....	636	994	358
16 to 17.....	3,884	6,265	2,381
15 to 16.....	18,086	22,657	4,571
14 to 15.....	42,163	48,475	6,312
13 to 14.....	63,369	65,496	2,127
12 to 13.....	66,806	68,649	1,843
11 to 12.....	70,155	72,110	1,955
10 to 11.....	68,864	70,957	2,093
9 to 10.....	67,860	70,024	2,164
8 to 9.....	70,934	73,359	2,425
7 to 8.....	66,652	69,167	2,515
6 to 7.....	51,707	53,847	2,140
5 to 6.....	6,358	6,408	50
Total.....	597,578	628,573	30,995

<sup>1</sup>Data for column (1) were taken from Table XXVII, p. 52, Annual Report of the City Superintendent of Schools for 1911.

<sup>2</sup>Data for column (2) were taken from the foregoing table and also from the reports made to the Committee on School Inquiry, June, 1911.

The number of pupils of each age given in column (1) is taken from the Annual Report of the City Superintendent of Schools for 1911. Excepting that the number of pupils of each age is given by totals instead of by sexes, this is his entire report on the ages of pupils in the elementary school. This report gives an idea of the number of pupils of each age on register at the end of the term, but gives no idea of the number of pupils of each age on register during the whole term. For this number one must turn to column (2).<sup>3</sup> A report on ages that has to do only with pupils on register at the end of the term is, therefore, a partial report, and, unless supplemented by the ages of all pupils on register during the term as a whole, is to an extent misleading.

What is true of the foregoing report of the City Superintendent of Schools is true of all of his reports, when made only in view of condi-

<sup>3</sup>Column (2) gives the number of pupils of each age on register during the February-June term, 1911, with the exception of pupils leaving school from special classes.

tions at the end of the term or at the end of the school year; they are incomplete and to an extent misleading. This is particularly true of the reports on promotion and on over-age.<sup>1</sup>

### 5. Reducing the Number Leaving School

There is no reason to assume that the fact that 30,995 pupils left the regular classes alone during the February-June term of 1911 is exceptional. There is every reason to believe that a similar number drop from school every term. Since, if pupils leave school prematurely, the very purpose for which the school exists is defeated, the problem of reducing the total number leaving and particularly of reducing the number leaving who are subject to the Compulsory Education Law demands immediate and earnest attention.

Though principals and teachers may be doing much to keep down the number leaving, so long as the reports of the several schools on pupils leaving and on the reasons therefor are not tabulated, it is impossible for District Superintendents, Associate Superintendents, and the City Superintendent to give the help in the solution of this problem that they should give. As a preliminary step in the reduction of school losses we, therefore, recommend that the reports from the several schools on pupils leaving and on the reasons therefor be collected and tabulated, term by term, for the Greater City, to the end that the number dropping from school and the reasons therefor may be known and that the causes of their leaving, in so far as these lie within the school, may be eradicated.

### 6. Conclusions

The foregoing discussion may be thus summarized:

(1) Thirty thousand nine hundred and ninety-five (30,995) pupils, or 5.17 per cent. of the total enrollment, in regular classes dropped from the elementary school during the February-June term, 1911; or one pupil out of each twenty in regular classes left school before the end of the term.

(2) Taking the several grades together, there was little difference between the losses among boys, 5.26 per cent., and the losses among girls, 5.07 per cent.—a difference of but .19 of 1 per cent. in favor of girls.

(3) The number of pupils leaving regular classes at each of the several ages from six to seven up to thirteen to fourteen, inclusive, was quite uniform, varying from 1,843 (12 to 13), to 2,515 (8 to 9), or from 5.95 per cent. to 8.11 per cent. of the total number leaving. The losses from fourteen to fifteen were the largest, 6,312, or 20.37 per cent. The number dropping out from fifteen to sixteen was likewise

<sup>1</sup> See Annual Report of the City Superintendent of Schools for 1911, Table XXVIII, p. 54, and Table XXXVII, pp. 66-67.

large, 4,571, or 14.75 per cent., as was also the number from sixteen to seventeen, 2,381, or 7.68 per cent.

(4) Of the 30,995 leaving regular classes during the February-June term, 1911, 15,944, or 51.44 per cent., were subject to the Compulsory Education Law.

(5) Because no account is taken of the number of pupils leaving school, certain of the reports of the City Superintendent of Schools are incomplete and, to an extent, misleading.

(6) The reduction of the number dropping from school and particularly the reduction of the number leaving who are subject to the Compulsory Education Law demand immediate and earnest attention.

(7) To the end that the number leaving and the reasons therefor may be known, and that the causes of their leaving, in so far as they lie within the school, may be eradicated, we recommend that the reports from the several schools on the number dropping out and the reasons therefor be collected and tabulated term by term for the Greater City.

### VIII.—Conclusions and Recommendations

A summary of conclusions and recommendations is given at the end of each of the several sections of the foregoing report. It will, therefore, be necessary to bring together certain of our conclusions and the more important of our recommendations only.

1. Among the chief causes of non-promotion assigned by the eight committees appointed in the fall of 1909 by the City Superintendent of Schools were Part-time, Excessive Size of Classes, Irregular Attendance, Late Entrance to School, Sluggish Mentality, and Ignorance of the English language.

Basing our conclusions on the rate of promotion at the end of the February-June term, 1911, we find, when each of these assigned causes is considered apart from the others:

- (a) That part-time and excessive size of classes are responsible for the non-promotion of relatively few pupils.
- (b) That irregular attendance is a decided factor in increasing the number of non-promotions.
- (c) That late entrance to school and sluggish mentality, as expressed in over-age, are material factors in causing non-promotion.
- (d) That inability to use the English language increases decidedly, in the relatively small group of pupils affected, the number of pupils failing promotion.

2. Considering the slightly lower rate of promotion at the end of the February-June term, 1911, for over-size classes, but more particularly the acknowledged educational disadvantages of over-size classes.

and the prevailing practice in other cities of the country, we recommend that whenever practicable all classes having more than fifty pupils be reduced to classes of forty-five pupils.

3. Basing our judgment on the decidedly lower rate of promotion at the end of the February-June term, 1911, for over-age pupils, and for pupils unable to use the English language, we recommend:

- (a) That classes in which special attention and direction are given to over-age pupils be provided at least for all pupils two and more years behind their grade.
- (b) That "C" classes—classes for the instruction of pupils unable to use the English language—be provided at least for all pupils in 1A classes unable to use the English language.

4. In this report certain of our conclusions and recommendations—for example, our recommendation to reduce all classes having above fifty pupils to forty-five pupils—do not rest so much on the facts presented as on educational opinion. Educational opinion, to have proper weight, should be supported by facts. To determine, on the basis of fact, the relative worth of whole-time and part-time classes, the proper size of class, and to answer, on the basis of fact, other questions raised in this report, such as the actual length of the present course of study, the actual length of time pupils are in school between six and fourteen, inclusive, etc., further data are needed. To collect some of the needed data it will be necessary to conduct special investigations; other data can be collected from the current and cumulative records of the schools.

Among the more important special investigations we recommend are investigations to determine:

- (a) The relative educational achievements of pupils in whole-time and part-time classes.
- (b) The relative educational worth of classes of each of the several sizes.
- (c) The proper limits of the period of elementary education.
- (d) The different groups of pupils of varying abilities and educational needs.
- (e) The extent to which pupils now in "E" classes are classified and instructed according as their over-age is due to late entrance or to slow progress—retardation.

The more important items of data we recommend to be collected, at least for a time, by terms from the current and cumulative records of the school are shown in the blank at the end of this report.

All the items called for in this blank are not now both matters of current and cumulative school record. The causes of absence due to late entrance, for example, are not now a part of the current record. Further, owing to the fact that the pupil's record card (a cumulative

record) was not introduced until June, 1909, it is impossible to give for all pupils now in school, who entered the 1A Grade, the date of entrance and the total number of days in school from entrance in the 1A Grade to June 28, 1912. These facts could be given only for pupils entering the 1A Grade in the February-June term, 1909, and thereafter. Similarly, with regard to pupils entering later than the 1A Grade. It is also impossible to give the total number of terms a pupil has been on part-time since entrance to school. But the current and cumulative records of the school are such, or can easily be made such, that all the items called for in the blank could, in due time, be supplied, and it is possible even now to supply the major part of them. •

If the recommended blank is adopted and those data which can now be supplied are collected and tabulated, data will be at hand similar to those presented in this report, and additional data as follows:

(a) Data on the actual ages of children (Item 2), and these data, in connection with the data on grade (Item C) and on promotion and non-promotion (Items 11 and 12), will make possible for the first time an accurate estimate of the amount and degree of over-age in the entire system (exclusive of classes for the deaf, the blind, and classes for crippled and defective children).

(b) Data to show the amount of absence due to late entrance. ("1" of "a" of Item 3). These data, together with data on absence due to irregular attendance ("b" of Item 3), will make it possible for the first time to determine the actual total amount of absence. Should teachers and principals be notified, at the beginning of a term, it would be possible at the end of the term to collect data on the causes of late entrance. With a knowledge of the causes of late entrance, it would be possible to determine to what extent such absence is due to home and other conditions, and to what extent it is due to failure to enforce the Compulsory Education Law.

(c) The data supplied on tardiness, conduct, and truancy (Items 4, 5, and 6), along with the data on absence (Item 3), will go far to substantiate or to disprove the prevalent belief that part-time has an unfavorable effect on the attendance, punctuality, and conduct of children.

(d) The data on pupils leaving school (Item 7), and the causes thereof (Item 8), will not only make it possible to make a complete report on register, absence, promotion, non-promotion, and over-age, etc., which is not now done but the knowledge of the causes of leaving might make it possible to reduce greatly the number dropping from school.

(e) Data will also be at hand (Item 14) to determine the number of beginners in the 1A grade, hence will supply the basis of estimating what portion of all pupils entering the school continue to the end of each grade.

(f) Data (Items 10, 11, and 12) to determine, with accuracy, the actual rate of promotion and of non-promotion, also the number of pupils receiving double promotion.

(g) Data (Item 13) to determine the actual length of time it takes pupils to complete each of the grades.

(h) Data (Items 14 and 15) to determine:

- (1) The actual total time pupils are in school between six and fourteen; also the total length of time they are in school.
- (2) The actual total length of the elementary school course of study, also the actual total length of time it takes to complete a given number of grades, e. g., the 1A-6B grades, inclusive.
- (3) \* The best age of entering the 1A grade, when judged solely in view of progress through the school.

Although it is impossible, as suggested above, to supply now the data called for in Items 14 and 15 for all pupils, the data that can be supplied now will answer for practical purposes.

(i) Should provision be made to collect the data called for in Item 16, some light will be thrown on the question whether part-time affects unfavorably the school progress of children.

(j) From Items 17 and 18, data will be at hand to determine whether the transfer of pupils from school to school affects unfavorably their advancement.

The blank is drawn so that the data called for can be tabulated by a general tabulating machine. This method of tabulation deprives teachers and principals of the value to be derived from tabulating the data for their own school, but it minimizes the work imposed on them, and makes possible a larger use of the data than when the reports of the several teachers are summarized on a principal's blank.

Should the data called for in this blank be collected, as we recommend, these data would not only supply a reliable basis for answering certain of the questions raised in this report, but would also supply currently a reliable basis for various kinds of administrative action in relation to them. Should data also be collected currently, as we would recommend, on deficiencies in the several studies of the curriculum, these would supply the basis of adjusting the qualitative and quantitative requirements of the course of study to the varying abilities and needs of different groups of children.





## TEACHERS' BLANK-DAY ELEMENTARY SCHOOL

Report for Term Ending June 28, 1912

Read Directions Carefully

A. (1) Register for Term ..... Public School ..... Boys ..... Girls ..... Total .....  
 (2) Left School Before June 28, 1912 ..... Days ..... Girls ..... Total .....  
 (3) On Register June 28, 1912 ..... Boys ..... Girls ..... Total .....

B. Kind of Class ..... Borough .....  
 (1) Whole-Time Class .....  
 (2) Summer Part-Time Class .....  
 (3) Alternating Part-Time Class .....  
 (4) A. M. Part-Time Class .....  
 (5) P. M. Part-Time Class .....

Teacher .....  
 (6) "T" Class .....  
 (7) "Tr" Class .....  
 (8) "T" Class .....  
 (9) Advanced Class .....  
 (10) Tubercular Class .....

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

# TEACHERS' BLANK-DAY ELEMENTARY SCHOOL

Report for Term Ending June 28, 1912

B. Kind of Class  
 (1) Whole-Time Class  
 (2) Summer Part-Time Class  
 (3) Afternoon Part-Time Class  
 (4) A. M. Part-Time Class  
 (5) P. M. Part-Time Class

Teacher  
 (6) "C" Class  
 (7) "D" Class  
 (8) "E" Class  
 (9) Summer Class  
 (10) Transfer Class

C. Grade

Time Taken to Fill Out This Blank (minutes)

19	17	18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SPENDING A. Term SCHOOL DAY TIME BASE	Number of Times Transferred This Term	Number of Times Transferred During Entire Term to School	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Total Number of Days in Attendance from Grade of Entrance to June 28, 1912	Number of Times Transferred This Term	Number of Times Transferred During Entire Term to School	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				
18																				

number of half days lost by irregular attendance" is to be recorded the actual number of half days lost by irregular attendance in the entire afternoon session should be counted as having been lost. To count the half days lost by irregular attendance of pupils leaving school before leaving no other public school of the City of New York, subtract the number of half days lost by attendance after entrance from the total number of half days the school was in session after entrance of such a pupil. The absence of a pupil received on promotion during the term should not be counted in the grade term which he was received and his absence in the grade in which he entered before promotion June 28, 1912. The tardiness of such a pupil should be counted in actual number of times pupil was tardy, counting tardiness on the basis of a morning session or session separately.

"Transfer" give the pupil's rating for transfer, e. g., A.  
 (1) check mark (✓) whether the pupil was reported at any time during the term as A. Transfer.  
 (2) check mark (✓) whether the pupil was reported as having been transferred during the term and entered in other public school of the City of New York. Care should be given to check a pupil as having been transferred.

6. Under "cause of leaving" should the cause be one of the following, merely insert the number of the cause, as here given, e. g., if the cause was "unusually physical" insert "2," otherwise specify the cause.

## CAUSES OF LEAVING

- Under compulsory school law.
- Unusually physical.
- Unusually mental.
- Left to go to school or other place.
- Left to go to a school or other place other than a public school.
- Removed from the city.
- Illness in the family.
- Economic status of the family (indicated by employment certificate).
- Economic status of the family (not indicated by employment certificate).
- Expelled in accordance with the law.
- Committed to a training school or other reformatory institution.
- Controlled by parents or others to a charitable institution.
- Kept at home for private tuition.
- Unknown.

7. Under "unable to use the English language" are to be included all pupils whose inability to understand and to use the English language on entrance to the grade is such, in the opinion of the teacher, as to interfere materially with their school work. Indicate such pupils by a check mark (✓).

I have examined this report, and in the best of my knowledge it is correct.

Principal

10, 11, and 12. In the proper column place a check mark (✓) after the name of each pupil, except for a pupil provided both during the term and at the end of the term, in which case place check mark (✓) in both columns 10 and 11.

13. Total number of days in this grade includes the days and the half days actually in attendance in this grade during the present term, and also the days and half days actually in attendance in this grade during previous terms. In case of item 12, and also in case of items 14 and 15, special care should be exercised to give the data for pupils leaving.

14 and 15. To item 14 give year and the name of the month, e. g., Jan. In items 14 and 15, the total number of days in school includes the actual number of days and half days in attendance.

16. Total number of terms on part-time should include the present and all previous terms in part-time classes.

17 and 18. Count only the times transferred to other public schools of the City of New York, but do not count the times transferred in other forms of the same school.



## THE COMPULSORY ATTENDANCE SERVICE



REPORT ON  
EDUCATIONAL ASPECTS OF THE  
PUBLIC SCHOOL SYSTEM

OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY  
OF THE BOARD OF ESTIMATE  
AND APPORTIONMENT

PART II

*Subdivision I*

*Elementary Schools*

SECTION F.—PROBLEMS IN ELEMENTARY SCHOOL ORGANIZATION

IV. The Compulsory Attendance Service

BY

JESSE D. BURKS, PH.D.

Director Bureau of Municipal Research, Philadelphia, Pa.

CITY OF NEW YORK  
1911-1912



## TABLE OF CONTENTS

<b>Preliminary Exhibits.</b>	<b>Page</b>
1. Official agencies concerned with the enforcement of the compulsory education law . . . . .	669
2. Organization and functions of the compulsory attendance service . . . . .	669
3. Data concerning cost of maintenance and personnel of the compulsory attendance service . . . . .	671
4. Organization chart . . . . .	672
<b>Introduction (Scope and Method of Report):</b>	
Reorganization urged by Board of Education, City Superintendent, and Associate Superintendent in charge . . . . .	672
Inquiry's facts cited to illustrate the next steps needed . . . . .	672
I. Lack of Administrative Standards . . . . .	674
II. Inadequacy of Subsidiary Records and Reports . . . . .	683
1. Defects in weekly and monthly reports of attendance officers . . . . .	684
2. Defects in original field records of attendance officers . . . . .	688
3. Defects in time and service records . . . . .	690
III. Lack of Uniformity in Procedure and in Presentation of Results . . . . .	690
1. Preliminary investigation by principals . . . . .	691
2. Information given by principals in referring cases . . . . .	693
3. Record maintained by principals concerning cases referred . . . . .	695
4. Methods employed in referring cases for investigation . . . . .	695
5. Times at which cases may be referred . . . . .	695
6. Means for informing principals as to results of investigation . . . . .	696
7. Method of reporting the return of truants and absentees . . . . .	696
8. Distribution of cases among attendance officers . . . . .	696
IV. Delay in Reporting . . . . .	697
V. Inadequate Basis for Administrative Control . . . . .	700
1. Administrative importance of the annual report . . . . .	700
2. Inadequacy of the unanalyzed totals . . . . .	703
3. Defective arrangement of statistical data . . . . .	704
4. Arbitrary adjustments and forced totals . . . . .	705
5. Variation in definition of terms employed . . . . .	708
VI. Defects of Organization . . . . .	709



	Page
VII. Undue Emphasis of Police Functions . . . . .	711
VIII. Suggestions for the Development of a Broader Program . . .	714
IX. Suggestions Concerning Reporting Forms and Classification of Data . . . . .	718
X. Suggestions for Further Study . . . . .	728
XI. Appendices	
1. Recommendations of Superintendent Maxwell and of Associate Superintendent Shallow regarding the com- pulsory attendance service, as found in the published annual reports of the City Superintendent of Schools for the years 1907-1911 . . . . .	732
2. Abstract of the chief requirements of the compulsory edu- cation law . . . . .	736
3. Distribution of functions among the official agencies charged with the enforcement of the compulsory educa- tion law . . . . .	738

## **(IV) THE COMPULSORY ATTENDANCE SERVICE**

### **Introduction**

#### **Preliminary Exhibits**

For the purpose of giving a concise preliminary view of the compulsory attendance service and its relation to other public and private agencies, there are presented here, in summary form, the following statements:

1. Official agencies concerned with the enforcement of the compulsory education law.
2. Organization and functions of the compulsory attendance service.
3. Data concerning the cost of maintenance and personnel of the compulsory attendance service.
4. Organization chart.

#### **Exhibit 1**

**Official agencies concerned with the enforcement of the compulsory education law:**

1. Permanent Census Board.
2. City Department of Health.
3. Compulsory Attendance Service.
4. Truant and Parental Schools.
5. State Department of Labor.
6. City Department of Police.
7. Children's Courts and Magistrates' Courts.

For a more detailed account of these agencies and their functions see Appendix 3.

#### **Exhibit 2**

##### **Organization and functions of the compulsory attendance service**

The general organization of the compulsory attendance service, together with the distribution of functions actually performed by the organization, are shown in the following analytical table and organization chart:

<i>Organization</i>	<i>Distribution of Functions</i>
Teachers and Principals	1. Maintenance of attendance records of pupils.
	2. Preliminary determination by principals and teachers of causes of pupils' absence.
Attendance Officers	3. Investigation of causes of absence in cases referred to attendance officers for investigation. <ol style="list-style-type: none"> <li>By principals of schools.</li> <li>By the central office (City Superintendent).</li> <li>By the Permanent Census Board.</li> <li>By the State Department of Labor.</li> <li>By other agencies and individuals.</li> </ol>
	4. Preventive treatment of truancy and irregular attendance. <ol style="list-style-type: none"> <li>Conference with parents, pupils, teachers, and principals.</li> <li>Return to school of pupils found to be absent without lawful excuse.</li> </ol>
	5. Disciplinary treatment of cases not satisfactorily dealt with by "argument and persuasion." <ol style="list-style-type: none"> <li>Arrest and place in school non-attendants and truants found on the street.</li> </ol>
District Superintendents	<ol style="list-style-type: none"> <li>Hear cases summoned on charges of habitual truancy and incorrigibility.</li> <li>Place truants and delinquent children on probation.</li> <li>Supervise children during the period of probation.</li> </ol>
Attendance Officers	<ol style="list-style-type: none"> <li>Prosecute parents responsible for the illegal absence of children.</li> </ol>
	6. Corrective treatment of delinquent children not otherwise dealt with satisfactorily. <ol style="list-style-type: none"> <li>Commit to parental and truant schools and other institutions (with the consent of parents) habitual truants and incorrigible pupils.</li> </ol>
City Superintendent of Schools	<ol style="list-style-type: none"> <li>Prosecute (in the courts) habitual truants and incorrigible pupils.</li> </ol>
Attendance Officers	<ol style="list-style-type: none"> <li>Parole children committed to parental and truant schools.</li> </ol>
City Superintendent of Schools	

<i>Organization</i>	<i>Distribution of Functions</i>
District Superintendents	d. Supervise children paroled.
Attendance Officers	7. Enforcement of the provisions of the child labor and newsboy laws.
City Superintendent	8. Administration and supervision.
Associate Superintendent	
District Superintendents	

## Exhibit 3

Data concerning the cost of maintenance and personnel of the compulsory attendance service:

Special Fund	1911 Budget	1912 Budget
Maintenance, Manhattan Truant School..	\$5,360	\$5,240
Maintenance, Brooklyn Truant School....	8,230	8,230
Maintenance, New York Parental School.	15,600	15,300
General Supplies, Parental and Truant Schools .....	40,000	42,350
Apparatus, Machinery, etc.....	3,300	.....
Contingencies .....	2,256	2,250
Maintenance of Truants, N. Y. Catholic Protectory .....	10,000	14,040
Total Special Fund.....	\$84,746	\$87,410

General Fund.	1911 Dis- tribution	1912 Distribution Based on 1st 4 Months
Teaching Staff, Parental and Truant Schools .....	\$20,688.50	\$23,826.66
Attendance Officers .....	121,500.00	125,042.45
Total General Fund.....	\$142,168.50	\$148,869.11

The personnel of the compulsory attendance service is as follows:

- 1 Associate Superintendent.
  - 23 District Superintendents.
  - 94 Attendance Officers.
  - 19 Teachers in Truant and Parental Schools.
  - 31 General Employees, N. Y. Parental School.
  - 21 General Employees, Brooklyn Truant School.
  - 19 General Employees, Manhattan Truant School.
- The number of general employees is variable.

### Scope and method of the report

As originally planned, this report was to have consisted of three distinct parts: (1) a description of organization and procedure; (2) a statement of results showing where, if at all, inadequacy of results was due to deficiencies of methods, organization, and procedure; (3) constructive suggestions for correcting weak points.

Fortunately, recent action of the Board of Education makes it possible in formulating the report to emphasize constructive suggestions without the necessity of proving that modifications are needed to remedy existing defects. Therefore, so far as details are here given with respect to present organization, procedure, and results, their purpose is primarily to support and facilitate the plan for reorganizing the attendance service, which was adopted at the meeting of the Board of Education April 24, 1912.

In this connection the following facts are significant:

First, that annually since 1908 defects of organization and procedure have been the object of severe criticism in the reports of the Associate Superintendent in charge (Appendix I).

Second, that, although these criticisms had been reiterated with a frankness seldom found in public documents, up to 1912 no serious attention seems to have been given to them or to the proposed reorganization, either by the Board of Education or by the City Superintendent.

Third, that in October, 1911, at the time of the hearing before the Board of Estimate and Apportionment on the 1912 budget of the Board of Education, the Committee on School Inquiry submitted a provisional report commenting on the same defects to which the Associate Superintendent had repeatedly called attention.

Fourth, that the results of the present inquiry into the compulsory attendance service were the subject of numerous conferences with the Associate Superintendent in charge. These results were, in part, incorporated in the specific plan for reorganization submitted by the Committee on Special Schools to the Board of Education and adopted with modifications on April 24, 1912. This plan, as finally adopted, provided: "That, in order to secure better results from the corps of Attendance Officers, the following changes be made:

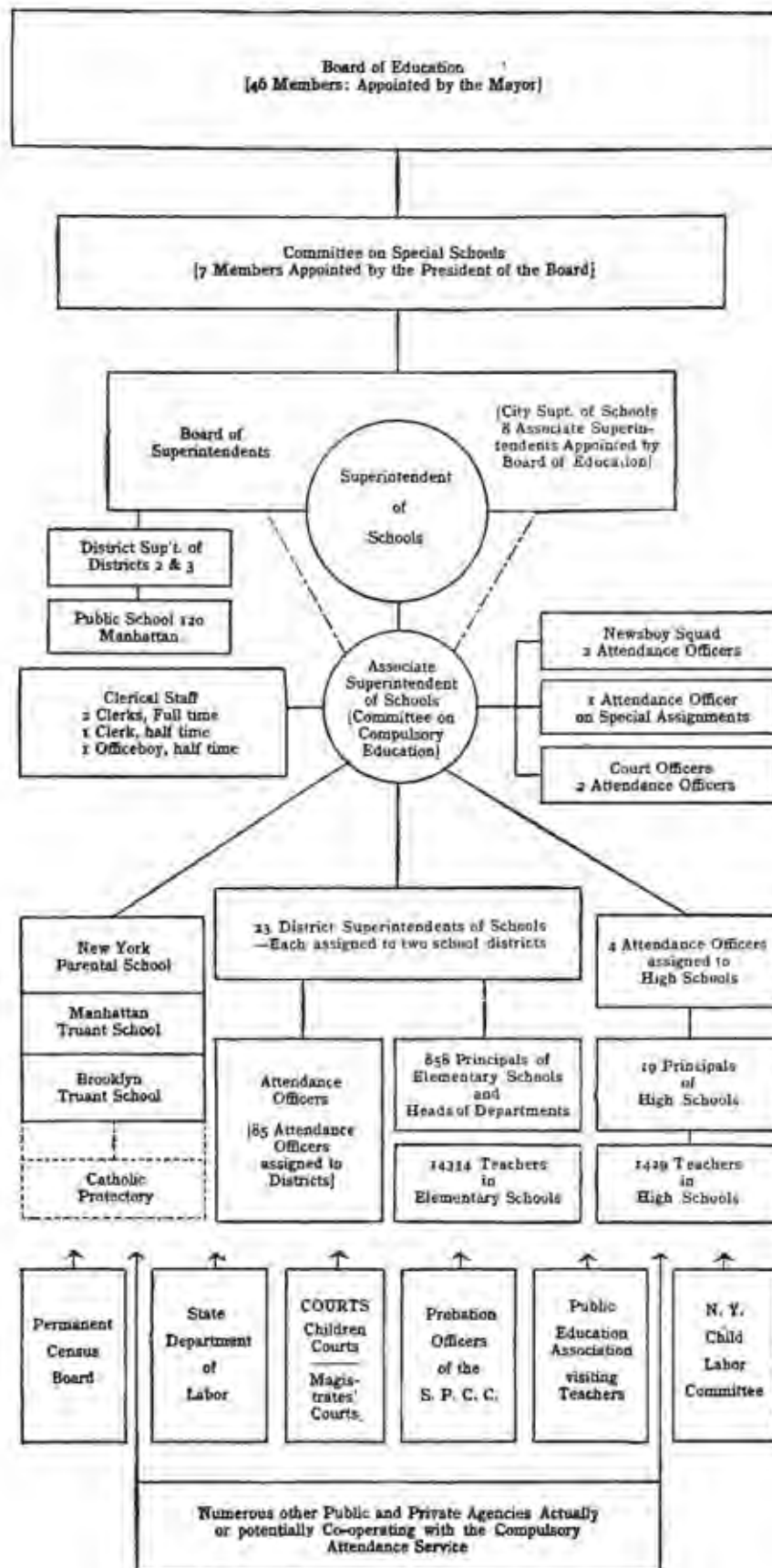
"1. That a uniform system of records and procedure in the offices of the City Superintendent of Schools and of the District Superintendents respecting the enforcement of the compulsory education law be established.

"2. That daily reports be required from all attendance officers.

"3. That the printed rules for the government of attendance officers, adopted December 15, 1908, be revised and made more definite in conformity with the changes recommended herein.



COMPULSORY ATTENDANCE SERVICE  
DEPARTMENT OF PUBLIC EDUCATION, NEW YORK CITY  
ORGANIZATION CHART







"4. That at least two of the corps of attendance officers be detailed to do work at large in connection with the enforcement of the compulsory education law.

"5. That the Committee on Special Schools be authorized to make a trial of a plan of special and daily supervision of the attendance officers in four contiguous districts to be designated by the committee, under such rules and regulations as the committee may prescribe."

An important difference should be noted between the recommendations made in the City Superintendent's report for 1911 (see Appendix 1) and the more recent proposals by the Committee on Special Schools. The former proposed to effect improvements in attendance work by transferring the function to the Permanent Census Board; while the latter proposed definite changes in methods of testing the efficiency of attendance officers and of supervising their work. It is to the need for these changes in methods of supervision and for efficiency tests, that the constructive suggestions and illustrative matter here presented chiefly relate.

Briefly summarized, the published criticisms of the Associate Superintendent, so far as they relate to the organization and administrative methods of the compulsory attendance service, are the following:

1. The organization of the compulsory attendance service places undue responsibility upon district superintendents for administration, and fails to provide for close field supervision.
2. The force of attendance officers is insufficient.
3. The method of doing work is grossly defective.
4. The system of records and reports is inadequate.
5. The number of day truant schools is not commensurate with the need.
6. The facilities of the parental school are inadequate.
7. The results accomplished have not been commensurate with the expenditures.

In order to furnish a fact basis for the proposed reorganization, detailed evidence is here presented concerning several classes of defects which have been found to interfere with the effective administration of the compulsory attendance service. This evidence, supplementing and reinforcing the general criticisms made by the Associate Superintendent, is classified under the following headings:

- I. Lack of administration standards.
- II. Inadequacy of subsidiary records and reports.
- III. Undue variation in the investigation and treatment of cases.
- IV. Delay in reporting.
- V. Inadequate basis for administrative control.
- VI. Defects of organization.
- VII. Undue emphasis of police functions.

To this evidence concerning defects are added a summary of constructive suggestions and three appendices:

- VIII. Suggestions for the development of a broader program.
- IX. Suggested reporting forms and classification of data.
- X. Suggestions for further study.
- XI. Appendices:

- 1. The recommendations of Superintendent Maxwell and of Associate Superintendent Shallow regarding the compulsory attendance service, as found in the published annual reports of the City Superintendent of Schools for the years 1907-1911.

- 2. An abstract of the chief requirements of the compulsory education law.

- 3. The distribution of functions among the official agencies having to do with the enforcement of the compulsory education law.

#### **1. Lack of administrative standards**

The most important available facts supporting the official criticism of administrative defects are those contained in the annual reports of district superintendents. These reports furnish the basis for the annual statistical report of the associate superintendent. They have never been published separately; nor, so far as ascertained, have they been utilized for comparative study of the methods and procedure of the several district superintendents as a basis for administrative control and standardization. Their sole use, apparently, has been to furnish data for the unanalyzed totals contained in the printed report of the city superintendent.

Twenty-five items from the 23 reports have been selected, reduced to comparable bases, and correlated in the six tables that follow. In this comparable form the facts furnish evidence of extraordinary variation in practice, which is completely hidden by the gross figures of the published report for 1910-11.

Table I.—Distribution of Attendance Officers and Their Field of Work  
(The numbering of columns is to facilitate percentage comparisons)

Districts	District Superintendents	Attendance Officers	REGISTER—ALL CLASSES ELEMENTARY SCHOOLS EX- CLUSIVE OF KINDERGARTENS		REFERRED BY PUBLIC SCHOOLS			CASES INVESTIGATED, ALL SCHOOLS	
			Total	Per Attendance Officer	Number	Per Cent. of Register	Per Attendance Officer	Total	Per Attendance Officer
1	2	3	4	5	6	7	8	9	10
						6.4			
28, 30	Campbell	3	23,751	7,917	5,535	23.0	1,845	7,029	2,343
4, 5	Chickering	2	27,389	13,694	1,711	6.0	855	3,317	1,658
6, 7	Davis	3	30,583	10,194	3,755	12.2	1,251	6,221	2,073
19, 22	Dwyer	4	27,006	6,751	4,258	15.7	1,064	6,493	1,623
37, 38	Edsall	5	38,592	7,718	7,235	18.7	1,447	8,920	1,784
45, 46	Ethinger	4	12,316	3,079	6,076	49.3	1,519	6,989	1,747
32, 36	Franklin	3	30,228	10,076	4,958	15.4	1,652	6,075	2,025
8, 12	Granger	4	20,397	5,099	5,494	26.9	1,373	8,708	2,177
27, 29	Griffin	5	29,186	5,837	11,409	39.0	2,281	13,139	2,627
13, 15	Hunt	3	31,119	7,039	4,096	19.3	1,365	5,399	1,799
16, 17	Jameson	5	31,926	6,385	7,000	21.9	1,400	8,968	1,793
20, 21	Lee	3	26,702	8,901	4,686	17.5	1,562	8,269	2,756
31, 34	Lyons	5	27,267	5,453	6,557	24.0	1,311	8,445	1,689
39, 40	McCabe	4	46,616	11,654	8,065	17.3	2,016	9,422	2,355
10, 11	O'Shea	3	15,274	5,091	3,660	23.9	1,220	5,205	1,735
2, 3	Richman	3	21,242	7,081	3,660	23.9	1,220	5,205	1,735
14, 18	Schauffier	4	17,260	4,315	3,772	13.6	965	5,100	1,700
23, 24	Shield	3	34,076	11,359	4,265	12.5	943	5,819	1,464
43, 44	Shriner	4	24,393	6,098	5,632	23.0	1,408	5,879	1,959
41, 42	Stewart	5	21,950	4,390	7,178	32.7	1,435	7,985	1,597
33, 35	Strachan	4	31,039	7,759	6,078	19.5	1,519	7,808	1,952
25, 26	Taylor	3	32,847	10,949	5,295	16.1	1,765	7,201	2,400
1, 9	Wade	4	23,273	5,818	4,229	18.1	1,057	7,308	1,827
City at large		86	614,433	7,144	131,050	21.3	1,541	174,919	2,034

Table II—Distribution and Classification of "Truancy" Cases Investigated

Districts	CASES INVESTIGATED ALL SCHOOLS			DIFFERENT REPORTED "CASES" OF TRUANCY		DIFFERENT CHILDREN FOUND TRUANT 5 DAYS OR MORE DURING THE YEAR				
	Different Reported Cases of Truancy	Per Cent. of Truancy	Number Reinvesti- gated	Per Cent. Reinvesti- gated	Number	Per Cent. of Truancy Cases	Enrolled in Public Schools		Number of Times Returned to School	Average
							Number	Per Cent. of Cases Referred		
	11	12	13	14	15	16	17	18	19	20
		11.9		13.11		15.11		17.6		19.15
28, 30	556	7.9	426	76	326	56	279	5.0	714	2.19
4, 5	240	7.2	111	46	201	83	167	9.7	201	1.00
6, 7	363	5.8	170	46	164	45	143	3.8	453	2.76
19, 22	524	8.0	186	35	338	64	328	7.7	524	1.55
37, 38	605	6.7	331	54	185	30	164	2.2	560	3.02
45, 46	220	3.1	81	36	33	15	32	0.5	99	3.00
32, 36	234	3.8	146	59	168	71	156	3.1	240	1.42
8, 12	525	6.0	343	65	273	52	192	3.4	617	2.26
27, 29	836	6.3	268	32	287	34	245	2.1	713	2.48
13, 15	863	15.9	97	11	371	42	309	7.5	610	1.64
16, 17	1,071	11.9	914	85	767	63	644	9.2	1,475	2.18
20, 21	1,104	13.3	425	38	413	37	334	7.1	962	2.32
31, 34	202	2.3	566	280	191	94	156	2.3	652	3.41
39, 40	479	5.0	355	74	370	77	355	4.4	736	1.98
10, 11	351	6.7	209	59	351	100	278	7.5	968	2.75
2, 3	350	6.8	92	26	67	19	59	2.0	157	2.34
14, 18	602	10.3	277	46	487	57	398	10.5	889	1.82
23, 24	425	7.2	185	43	214	50	176	4.1	388	1.81
43, 44	480	7.0	227	47	318	66	284	5.0	470	1.47
41, 42	363	4.5	219	60	189	52	171	2.3	725	3.83
33, 35	146	1.8	146	100	139	95	132	2.1	264	1.89
25, 26	289	4.0	233	80	243	84	234	4.4	685	2.81
1, 9	635	8.6	261	41	368	57	320	7.5	1,472	4.00
City at large...	11,488	6.5	6,269	54	6,579	57	5,715	4.3	15,048	2.28

Table III—Children Summoned Before District Superintendents on the Charge of Truancy

Districts	CHILDREN SUMMONED			PLACED ON PROBATION IN SAME SCHOOL				PLACED ON PROBATION IN DIFFERENT SCHOOLS			
	Number	Per Cent. of Different Children Truant 5 Days or More	Number	Per Cent. of Those Summoned	Reported Satisfactory	Per Cent. Reported Satisfactory	Number	Per Cent. of Those Summoned	Reported Satisfactory	Per Cent. Reported Satisfactory	
	21	22	23	24	25	26	27	28	29	30	
		21:15		23:21		25:23		27:21		29:27	
28, 30	89	27	68	76	63	92	5	5.6	4	80	
4, 5	29	14	29	100	29	100	0	0.0	0	0	
6, 7	74	45	52	70	50	96	13	17.5	12	92	
19, 22	258	76	258	100	121	48	0	0.0	0	0	
37, 38	274	148	203	74	167	82	14	5.1	7	50	
45, 46	52	157	50	96	40	80	2	3.8	2	100	
32, 36	153	91	149	97	137	91	4	2.6	3	75	
8, 12	270	98	176	65	154	87	45	16.6	20	44	
27, 29	219	76	195	89	127	65	5	2.2	0	0	
13, 15	280	75	171	61	127	74	5	1.8	5	100	
16, 17	476	70	428	89	286	66	12	0.4	....	....	
20, 21	209	50	141	67	129	91	2	0.9	2	100	
31, 34	187	97	121	64	107	88	23	12.3	15	65	
39, 40	320	86	243	75	206	84	8	2.5	6	75	
10, 11	391	111	324	82	211	65	16	4.0	15	93	
2, 3	38	56	121	55	20	95	16	43.1	12	75	
14, 18	147	30	122	82	92	75	6	4.0	6	100	
23, 24	334	156	158	47	246	155	24	7.1	11	45	
43, 44	114	85	106	92	85	80	8	7.0	4	50	
41, 42	279	147	219	78	194	88	6	2.1	2	33	
33, 35	232	167	158	67	125	79	36	15.4	36	100	
25, 26	202	83	189	93	147	77	4	1.9	0	0	
1, 9	232	63	226	97	189	83	6	2.5	5	83	
City at large..	4,860	73	3,807	78	3,052	80	250	5.1	176	70	

Table IV—Results of Probation

Districts	INDIVIDUALS PLACED ON PROBATION				UNSATISFACTORY PROBATIONERS COMMITTED TO TRUANT SCHOOLS	
	Number	Per Cent. of Those Summoned Before District Superintendents	Number on Probation Reported Unsatisfactory	Per Cent. on Probation Reported Unsatisfactory	Number	Per Cent.
	31	32	33	34	35	36
		31:21		33:31		35:33
28, 30	73	82.0	10	13.6	0	0.0
4, 5	29	100.0	0	0.0	2	....
6, 7	65	187.0	3	4.6	2	66.6
19, 22	258	100.0	59	22.8	5	8.4
37, 38	217	79.2	30	13.8	9	30.0
45, 46	52	100.0	2	3.8	1	50.0
32, 36	153	100.0	13	8.4	0	0.0
8, 12	221	81.0	21	9.5	17	80.9
27, 29	200	91.0	16	8.0	1	6.2
13, 15	176	62.0	44	25.0	3	6.8
16, 17	430	90.0	119	27.6	0	0.0
20, 21	143	68.0	14	9.7	9	64.2
31, 34	143	76.0	23	16.0	222	95.6
39, 40	151	47.0	24	15.8	24	100.0
10, 11	340	86.0	117	34.4	0	0.0
2, 3	37	97.0	4	10.8	1	25.0
14, 18	128	86.0	33	25.7	16	48.4
23, 24	182	54.0	18	9.8	15	83.3
43, 44	114	100.0	12	10.5	6	50.0
41, 42	225	80.0	63	28.0	1	1.6
33, 35	194	83.0	32	16.4	3	9.3
25, 26	193	95.0	37	19.1	4	10.8
1, 9	232	100.0	35	15.0	0	0.0
City at large.	4,057	83.0	729	17.9	132	18.1

Table V—Relation of Parents to Truancy

Districts	CASES ATTRIBUTED TO PARENTAL NEGLECT				Per Cent. of "Truancy Cases In- vestigated" Due to Parental Neglect	CHILDREN WHOSE PARENTS REFUSED TO SIGN CONSENT FOR COMMITMENT	
	Truancy Cases	Incorrigi- ble	Non- attendants	Total		Number of Refusals	Per Cent. of Different Children Summoned Before District Superin- tendents
	37	38	39	40	41	42	43
					37:11		42:21
28, 30	146	8	3	155	26.2	31	34.8
4, 5	92	0	299	391	26.1	3	10.3
6, 7	157	0	27	184	43.3	8	10.8
19, 22	81	43	14	138	15.5	112	43.4
37, 38	100	0	35	135	16.5	23	8.4
45, 46	25	8	132	165	11.4	21	40.3
32, 36	50	0	23	73	10.6	93	60.7
8, 12	55	0	38	93	10.5	36	13.3
27, 29	44	0	31	75	5.3	182	83.1
13, 15	227	0	64	291	26.3	161	57.5
16, 17	268	105	29	402	25.0	276	58.0
20, 21	263	5	96	364	23.8	75	35.9
31, 34	118	16	23	157	58.4	38	20.3
39, 40	54	16	57	127	11.3	48	15.0
10, 11	88	19	40	147	25.1	143	36.6
2, 3	177	....	120	297	50.6	1	2.6
14, 18	429	2	100	531	71.3	6	4.1
23, 24	85	7	40	132	20.0	8	2.4
43, 44	167	4	51	222	34.8	26	22.8
41, 42	118	0	113	231	32.5	171	21.3
33, 35	61	....	126	187	41.8	130	55.8
25, 26	70	2	117	189	24.2	92	45.5
1, 9	62	12	27	101	9.8	222	95.7
City at large.	2,461	234	1,719	4,414	21.4	1,906	39.2

Table VI—Prosecution of Children and Parents

Districts	CHILDREN TAKEN TO COURT		COMMITTED BY COURT		PARENTS ARRAIGNED BEFORE CITY MAGISTRATES				FOR EVERY 100 CASES OF PARENTAL NEGLECT	
	Number	Per Cent of Cases in Which Parents Refused Consent to Commitment	Number	Per Cent. of Children Arraigned	Number	Per Cent. of Cases of Parental Neglect	Number Fined	Per Cent. Fined	The Number of Children Taken to Court was	The Number of Parents Taken to Court was
	44	45	46	47	48	49	50	51	52	53
		44:42		46:44		48:40		50:48	44:37	48:37
28, 30	20	64	15	75	42	27.0	2	4.8	13.7	28.7
4, 5	3	100	3	100	98	25.0	0	0	3.25	108.5
6, 7	7	87	7	100	19	10.3	4	21.1	4.45	12.1
19, 22	47	41	31	65	8	5.7	0	0	58.0	9.9
37, 38	23	100	11	47	7	5.1	5	71.4	23.0	7.0
45, 46	9	42	2	22	29	17.5	5	17.2	36.0	116.0
32, 36	22	23	6	27	21	28.7	0	0	44.0	42.0
8, 12	36	100	26	72	20	21.5	2	10.0	65.0	36.4
27, 29	76	41	38	50	21	28.0	0	0	172.0	47.7
13, 15	63	39	41	65	30	10.3	2	6.7	27.2	13.2
16, 17	127	46	100	78	10	2.4	1	10.0	47.4	3.7
20, 21	34	45	27	79	30	8.2	6	20.0	12.9	11.4
31, 34	38	100	17	44	9	5.7	0	0	32.2	7.5
39, 40	32	66	18	56	65	5.1	10	15.4	59.2	120.0
10, 11	143	100	92	64	21	14.2	5	23.8	162.5	23.9
2, 3	1	100	1	100	106	35.6	7	6.6	.55	60.0
14, 18	1	16	1	100	19	3.5	6	31.6	.23	4.4
23, 24	2	25	0	0	39	29.5	7	17.9	2.35	45.9
43, 44	22	84	12	54	38	17.1	7	18.4	13.2	22.7
41, 42	73	42	36	49	84	36.3	13	15.5	62.0	71.1
33, 35	40	30	19	49	30	16.0	4	13.3	65.6	49.2
25, 26	42	45	30	71	96	50.7	28	29.2	60.0	137.1
1, 9	47	21	36	76	47	46.6	12	25.5	75.8	75.8
City at large..	908	47	586	64	886	20.0	127	14.3	37.3	36.0



It will be noticed that, in addition to setting out separately the data for each supervisory attendance district, these comparative statements reduce each item to a percentage basis in order to afford a more ready means of comparison. The percentages have been calculated by selecting a "base" which seemed to offer the most significant point of reference and comparison for each of the items presented. A more significant basis might doubtless be selected in some instances if data were available. It is believed, however, that the calculations presented in the tables will clearly illustrate the usefulness of such a method of exhibiting the range of administrative practice and results.

The following summary of the foregoing tables indicates concisely the wide divergence in practice among district superintendents:

- |  |        |     |
|--|--------|-----|
| 1. For every 100 children on register in elementary schools, the number of cases reported to attendance officers for investigation varies from   | 6 to   | 49  |
| 2. For every 100 cases reported to attendance officers for investigation, the number of "different reported cases of truancy" varies from.....   | 2 to   | 16  |
| 3. For every 100 "different reported cases of truancy" investigated by attendance officers, the number of such cases reinvestigated varies from .....                                  | 11 to  | 280 |
| 4. For every 100 "different reported cases of truancy" investigated by attendance officers, the number of different children found truant five days or more varies from.....           | 15 to  | 100 |
| 5. For every 100 cases referred by public schools to attendance officers for investigation, the number of different children found truant five days or more varies from less than..... | 1 to   | 10  |
| 6. For every 100 different children found truant five days or more, the number of times such children were returned to school varies from.....   | 100 to | 400 |
| 7. For every 100 "different reported cases of truancy" investigated, the number of such cases probably due to parental neglect, varies from.   | 5 to   | 71  |
| 8. For every 100 different children found truant five days or more, the number of children summoned before the district superintendent on the charge of truancy varies from .....      | 14 to  | 167 |
| 9. For every 100 children summoned before the district superintendent on the charge of truancy, the number placed on probation in the same school, varies from .....                   | 47 to  | 100 |

10.	For every 100 children placed on probation in the same school, the number reported satisfactory varies from .....	48 to	155
11.	For every 100 different children brought before district superintendents on the charge of truancy, the number placed in different schools varies from .....	0 to	42
12.	For every 100 children placed on probation in different schools, the number found satisfactory varies from .....	0 to	100
13.	For every 100 children placed on probation, the number reported unsatisfactory varies from..	0 to	34
14.	For every 100 children placed on probation and reported unsatisfactory, the number committed to the truant school by the City Superintendent varies from.....	0 to	100
15.	For every 100 children summoned before district superintendents on the charge of truancy, the number of parents who refused to sign consent for commitment varies from.....	2 to	95
16.	For every 100 parents who refused to sign consent for commitment of their children, the number of children taken to court varies from	16 to	100
17.	For every 100 children taken to court, the number committed by court varies from.....	0 to	100
18.	For every 100 cases attributed to parental neglect, the number of parents arraigned before city magistrates varies from.....	2 to	50
19.	For every 100 parents arraigned before city magistrates, the number fined or imprisoned varies from .....	0 to	71
20.	Of the total number of cases investigated in the several districts, the number per attendance officer varies from.....	1,454 to	2,756

Some of the variations shown in this comparison probably result naturally and necessarily from differences in local conditions. It is not to be expected, for example, that the proportion of registered pupils referred to attendance officers for investigation should be uniform throughout the greater city. Owing to the extremely wide variation in the figures, however, the conclusion is inevitable that differences in local conditions cannot fully account for the variations in administrative practice.

Is it credible, for example, that local conditions should make necessary in one district an average of almost three investigations for every case received by attendance officers, whereas in another district there

should be necessary only one-tenth as many reinvestigations as there were original investigations?

Can it be normal that in one district only 15 out of each 100 "reported cases of truancy" should be found to be those of "five-day" truants, if in another district the entire 100 are properly so reported; or that there should be ten times as many different truants in each 100 cases investigated in one district as in another?

If it is good practice in one district to summon only 15 out of each 100 truants before the superintendent for formal hearings, is it not questionable whether the practice of making 167 such summonses for the same number of truants in another district can be economical and effective? If good results in one district are obtained by placing on probation *all* of the pupils summoned before the district superintendent, does it seem likely that equally good results are to be obtained in another district by placing only 47 per cent. of the offenders on probation?

The fact that *all* of the children placed on probation in one district and reported unsatisfactory were committed to truant schools by the City Superintendent raises the question whether another district, in which *no* such children were committed to truant schools, has either something to learn from or something to teach the first district. If 98 per cent. of the parents in one district gave their consent to the commitment of their children brought before the district superintendent on the charge of truancy, it may be questioned whether local conditions in another district should make it impossible to obtain the consent of more than 5 per cent. of the parents.

If, by a proper preparation and prosecution of truancy cases in court, it is possible in one district to secure the commitment of all children taken to court, the question may be raised whether the failure in another district to secure the commitment of any truants prosecuted in court is due primarily to the indifference of the judges, or to a difference in procedure on the part of attendance officers.

If it is necessary in one district to prosecute one-half as many parents as there were reported cases of parental neglect, the question arises whether in another district it is advisable to prosecute only 2 per cent. as many parents as there were reported cases of neglect.

## II. Inadequacy of subsidiary records and reports

Obviously the reliability of the published summary report is measured by that of the twenty-three subsidiary reports of district superintendents which enter into it; and the reliability of these twenty-three reports in turn depends upon that of the subsidiary records and reports upon which they are based. An analysis of the entire system of records and reports is, therefore, necessary to determine the extent to which

the annual reports provide a sound basis for administrative judgment or for independent appraisal of the compulsory attendance service.

Most important among the primary records, upon which all summary statements depend, are the weekly reports of attendance officers and the original field records made by attendance officers in their current work. These will be examined in turn.

### 1. Defects in Weekly and Monthly Reports of Attendance Officers

In order to facilitate and clarify the consideration of the weekly and monthly reports, the first part of the reporting form is here reproduced.

The various items provided for in this form are poorly classified and loosely related. The arrangement does not permit ready examination and verification of totals. The captions are not, in many cases, clearly defined. The resultant information provided, accordingly, is not uniform or adequate for administration purposes. The results of an analysis of 25 of the reports actually submitted by attendance officers for the week ended June 5, 1911, well illustrate the consequences of employing a form of report which, by the ambiguity of its captions and the incoherence of its arrangement, gives license to laxity and uncertainty of interpretation and practice.

#### Item 1. *"Number of visits made during week."*

In fourteen of the twenty-five reports entries were found under sub-head (e), giving the number of visits to the office of the district superintendent; no entries whatever having been made here in the other eleven reports. A summary of this item at the end of the year, or a total into which such a summary enters, is accordingly open to doubtful interpretation. Assuming that one-half of the 94 attendance officers record "visits to district superintendents' offices" under this heading, the entire 6,961 visits "to other places" reported for 1910-11 may be thus accounted for. Without definition the item is not intelligible as a measure of service rendered.

#### Item 2. *"Number of cases received from following places during the week."*

The arrangement makes it difficult to distinguish between the "school number" and the "number of cases" received; and the lack of columnar form prevents ready addition and checking of figures. Two of the reports interpret the "total" of the last line in this item to include only the cases received from the district superintendent's office, the board of health, and "others"—the details on the same line with "totals." Two other reports have no entry in this space.

In thirteen of the reports headings for parochial schools were inserted by the attendance officers, and the number of cases from such



**II. DEPARTMENT OF EDUCATION  
THE CITY OF NEW YORK**

191

Borough of ..... School District .....

**WILLIAM H. MAXWELL,**  
City Superintendent of Schools,  
Dear Sir:

The following is a true and correct report of my work for the week ending  
at 5 p. m., Saturday .....

1. No. of visits made during week	a. To homes	-	-	-	-	-	-	-	-
	b. To schools	-	-	-	-	-	-	-	-
	c. To stores and factories	-	-	-	-	-	-	-	-
	d. To courts	-	-	-	-	-	-	-	-
	e. To	-	-	-	-	-	-	-	-
									<b>Total</b>
2. No. of cases received from following places during the week:									
Day School No. ....					E. S. No. ....				
No. of cases .....					No. cases .....				
Day School No. ....					E. S. No. ....				
No. of cases .....					No. cases .....				
D. S. Office.		C. S. Office.		B'd of Health		Others		<b>Total</b>	
Cases .....		Cases .....		Cases .....		Cases .....		Cases .....	
3. Total number cases investigated this week .....									
4. Results of investigations:									
(a) Illegally kept at home by parents					Ret'd by me		Total		
(b) Returned by me; temporary legitimate absence					(personal illness, temp. necessity, illness in family)				
(c) Extreme poverty; not closed					Returned		Total		
(d) No. physically unable to attend									
(e) No. mentally disqualified to attend									
(f) Found to be truants					Boys		Girls		Total
(g) Taught at home					In Private Sch.		Total		
(h) "Moved"					"Not found"		Total		
(i) Children under seven years									
(j) Children over 16 years of age									
(k) Moved from City									
(l) Working with I. B. C.					Without E. C.		Total		
(m) Total cases investigated by me and reported to schools and offices this week .....									
(n) Pending cases					referred this week				
					referred previously				
5. (a) No. of children found employed contrary to									
Law (Dept. of Labor took no part in these)									
(a) In street trades (newsboys and peddlers)									
(b) In factories									
(c) Mercantile establishments									
(d) In other trades									
(e) At home									
(b) Total number of these placed in school by me this week									
In following schools					Total				
No. cases .....					Total				
(c) No. of these pending									
(d) No. of these, including previously reported cases, taken to court this week									
6. (a) No. of non-attendants and truants found by me on Street and placed in following schools this week*									
(b) Schools									
Cases					Total				
N. A.		T.		N. A.		T.		N. A.	
(Vouchers attached)									
(c) Total number of children summoned to court this week									
(d) No. of children committed by court this week on my complaint:									
To Institutions					To Truant Schools		Total		
(e) No. committed by City Supl. this week on my complaint									
7. No. of cases not settled to date									
8. No. of children summoned before Dist. Supt. this week									
9. Times lost by absence from duty this month									
days					hours				

\*A non-attendant is a child of school age, not enrolled in any school.  
†Reported only at end of month.  
‡E. C.—Employment Certificate.

N. A.—non-attendant.  
T.—Truant.

(i) Results of investigation of Evening School cases must be reported in Annual Report, statistics to be kept weekly.  
Names and addresses of those reported "moved" and "not moved" and "not found" must be written on second page here.



schools entered in detail. Ten others include cases from parochial schools in the total, but make no detail entries, appropriate space for parochial school cases not being provided.

Item 3. *"Total number of cases investigated this week."*

Only 23 of the 25 reports contain entries under this heading, though the other two have entries under "results of investigations." The entries in 14 of the reports agree exactly with the total under Item 2. Six gave a larger number of cases investigated than were referred, and two a smaller number. One of these includes the "pending cases referred this week" in the total of cases investigated. One report interprets the item to include only "cases investigated and reported to schools and offices this week."

Item 4. *"Results of investigation."*

- (a) "Illegally kept at home by parents....."  
Ret'd by me.....Total....."

Eight of the reports have no entries under this subheading. Three have entries for children kept at home. Eleven reports have the same number in each of the three spaces. In two reports the entries in the space for "total" are the sum of the number of children kept at home and the number returned; a combination which is obviously without any meaning. In one report an attendance officer who had found three children kept at home and had returned two of them, cautiously makes, in the space for "total," the non-committal entry 3-2. It is clear that a monthly or annual summary of this item is not open to accurate or intelligible interpretation.

- (b) "Returned by me, temporary legitimate absence."

Although no provision is made for a record of cases of temporary legitimate absence that are *not* returned by attendance officers, the number of cases under this heading exceeds that of any other group under "results of investigations." This fact raises a question as to whether an unduly large proportion of attendance officers' time is given to investigations which might be disposed of by a more effective method of preliminary inquiry by principals, teachers, and visiting teachers.

- (c) "Extreme poverty; not closed.....Ret'd.....Total....."

In one of the reports the same number is given in each of the three spaces, although it seems obvious that the total should include the other two entries.

- (f) "Found to be truants.....Boys....Girls....Total....."

The space immediately following "truants" is superfluous. In three of the reports entries are made in this space identical with the total.

- (h) "Moved.....Not found.....Total....."

There is uncertainty here as to whether the cases "not found" are to



be included in the cases reported "moved" or not. Four of the reports have entries under "not found" with none under "moved"; four have entries under "moved" with none under "not found"; five add the "moved" and "not found" cases to produce the total; one gives the same number under each of the three headings, and one gives the total only, without other entries. The remaining ten reports have no entries.

(i) "Working with employment certificates. . . . Without employment certificates. . . . Total. . . ."

There is great confusion as to the relation of the cases included under this heading to those subsequently reported as "found employed contrary to law" (5a). Eighteen of the reports enter under "total" the number of children working with certificates, evidently assuming that those working without certificates are accounted for under the heading "employed contrary to law" (5a). One report gives under "total" the sum of those working with and without employment certificates. Conclusions based upon such data have questionable value as indices of actual conditions among employed children.

(m) "Total cases investigated by me and reported to schools and officers this week."

In only 14 of the 25 reports do the entries under this heading represent the sum of the preceding twelve items (a-l) under "results of investigations." Nineteen of the reports give the same number here as under "total number of cases investigated this week"; two make their entries agree with the "total number received from all sources"; and two give a number less than the "number received" (Item 2) and greater than the "number investigated" (Item 3).

(n) "Pending cases; referred this week. . . . Referred formerly. . . ."

Two reports give the same number of "pending cases referred this week" as were "reported to schools and officers." There is no agreement as to whether, among pending cases, are to be included: (1) children found employed contrary to law, but not returned to school; (2) cases of extreme poverty, not closed; (3) children moved and not found; (4) children reported as working without employment certificates; (5) cases not settled to date (Item 7); and (6) children summoned before district superintendents for hearings and not finally disposed of.

Item 5 (a). "*Number of children found employed contrary to law (Department of Labor took no part in these).*"

The relation of the entries under this heading to those under 4 (b)—"working without employment certificates"—is uncertain. Several district superintendents expressed the opinion that the cases under 5 (a) included those under 4 (b), but no way could be devised for verifying this opinion from the records. In three of the 25 reports there were entries under 4 (b) without entries under 5 (a). One obvious reason for this confusion is the fact that by reason of its typographical appearance the heading of the item has the form of a sub-head.

Item 6 (a). "*Number of non-attendants and truants found by me on street and placed in the following schools this week.*"

This heading is interpreted in two distinct ways in the 25 reports. In fourteen, the entries indicate that all truants "found on the street" as well as those "placed in schools" and previously entered under 4 (f) are included. Only six of the reports interpret the heading to include *street cases only*, as shown by the fact that cases are reported under 4 (f) but not under 6 (a).

Evidently no completely valid conclusions as to conditions found and service rendered can be derived from the returns under a caption subject to such uncertain interpretation.

6 (c). "Total number of children summoned to court this week."

6 (d). "Number children committed to court this week on my complaint."

6 (e). "Number committed by City Superintendent this week on my complaint."

Placing these three subheads under Item 6 is misleading, as they evidently are not intended to refer exclusively to "children found employed contrary to law."

Item 7. "*Number of cases not settled to date.*"

Five reports enter here the number of all cases pending—the same figure as 4 (n); two give the "pending cases referred this week"; four give figures that bear no apparent relation to the "pending cases" under 4 (n); and 14 contain no entry whatever.

Obviously the caption needs definition and, as it stands, furnishes no reliable basis for control.

On the second and third pages of the report-form are ruled spaces, in columnar form, for records of individual cases of (1) "children illegally absent from school"; (2) "arraignment of parents and others (adults) in court for violation of compulsory education law"; (3) "arraignment of children in court"; (4) "time spent in court"; and (5) "disbursements, carfares, etc."

Under the first general heading it is presumably intended that the facts concerning all children illegally absent should be entered. Apparently the practice is to enter the facts for non-attendants and truants only; for, of seventeen reports in which entries are made on the first page under "illegally kept at home" (4a), none give the data called for in the columns on the second page.

The lack of uniformity in reporting the data called for in this part of the form may be shown by a summary of the entries for 17 cases contained in the 25 reports examined. The column headings are given in the order in which they appear under "children illegally absent from school":

Column Headings	Entries	Column Headings	Entries
1 Date .....	11	9 Name of employer.....	..
2 Name of child.....	17	10 Nationality .....	6
3 Age .....	16	11 No. ....	9
4 Where from .....	13	12 Charge .....	6
5 Name of parent or guar- dian .....	16	13 Non-attendant .....	4
6 Residence .....	15	14 Truant .....	11
7 Employment of child... ..	..	15 Absentee .....	..
8 Place of employment... ..	..	16 Case closed .....	10
		17 Remarks .....	14

The rules and regulations for the government of attendance officers adopted by the Board of Education require that these officers "shall make their regular reports in triplicate, by the use of an indelible pencil and carbon sheets, on Saturday of each week to their superintendents, who may call for vouchers and other memoranda by which to verify the reports. The duplicate reports, when approved, with date, by the District Superintendents, shall be forwarded to the Associate Superintendent in charge. The triplicate report shall be kept by the officer, to be used in lieu of a record book. To the weekly report shall be attached a list of all pupils reported absent from school on account of neglect of parents or because of poverty, and of all pupils not found; also a weekly record of the attendance and conduct of all paroled truants in their respective districts. The lists shall be arranged by schools, and shall show name, age, grade, and last residence."

In practice the weekly and monthly reports of attendance officers are rendered on the printed form of four pages, the first page of which was reproduced on page 684. It will be seen at once that this form does not lend itself to use as required in the regulations. On account of typographical make-up, the entries cannot be made in triplicate by the use of carbon sheets. In practice two copies of the report are prepared independently, one copy being sent to the office of the Associate Superintendent, the other retained in the office of the District Superintendent.

## 2. Defects in Original Field Records of Attendance Officers

In reply to specific questions submitted, twenty of the twenty-three district superintendents furnished a detailed description of the original records maintained by attendance officers of each case investigated. The replies indicate no uniformity in requirements as to the method of recording and filing information regarding individual cases investigated. The items recorded are determined by the character of the forms used, which, as will be shown later, vary greatly.

The record form in most general use is the officers' note book, providing for the entry, in chronological order in each case, of *date; number; name; age; place; parent; nation; residence change; remarks.*

Besides this, in about one-half of the districts, officers make records on the cards subsequently described (page 694), which are used by principals in referring cases for investigation. Furthermore, entries are made in the "truant book" previously described, which is maintained in most districts. The entries are made in some cases by attendance officers in their own handwriting; in other cases by the principals' clerks.

The forms prescribed for weekly reports of attendance officers call for further repetition of entries in the cases of children found to be illegally absent from school and of children arraigned in court; and in cases of children found to be truant five days or more during one school term, the regulations for the government of attendance officers require that "a card list in duplicate" shall be prepared in January and June of each year.

It will thus appear that three complete records of every case investigated are, according to the regulations, to be maintained; a fourth record, in duplicate, in the weekly reports for all children illegally absent from school; and a fifth record, also in duplicate, in cases of five-day truants.

With all of this multiplication of records, no provision is made, so far as ascertained, in any of the districts for "alphabetical lists of all cases, so arranged as to permit of cumulative data under each name," as required by Section 5 of the regulations governing attendance officers.

So far as such cumulative records are lacking, it is practically impossible for attendance officers and district superintendents to deal with individual children in the light of past experience, except as the unaided memory or the oral statements of teachers, principals, or the children themselves may furnish the necessary information.

A "report on truants paroled from truant schools and institutions" is also provided for on the back of the weekly report form. Spaces are provided for a report on the attendance and conduct of paroled truants; specific requirement being made, in a printed note, that "inquiries must be made by the officers in person, at least once each week, at the school where paroled child attends, and date of inquiry recorded in last column." The question is here raised whether there is any real advantage in this prescribed method of direct inquiry at the school which could not be as well provided by a weekly report on each paroled truant mailed by the school principal to the attendance officer, with a request that the officer call at the school in cases where special discipline is considered necessary.

The form of the weekly report requires that the "date" be entered by the Attendance Officer at three different places; the "school district" at two places; and the "name of the attendance officer" at two places. The form is designed to be filed in document cases that require folding, rather than in cases for the more convenient and economical system of flat filing. The thickness of the paper used makes demands for an unnecessarily large amount of filing space.

### 3. Defects in Time and Service Records

The daily statement of time employed and service rendered by attendance officers, provided for on the back of the weekly report form, is inadequate to serve the purposes of administrative control for which it is apparently designed. The record of time employed calls merely for the time of beginning and of closing each day's work; no record whatever being required of unemployed time within these limits. No basis is furnished in such a record for judgment as to the distribution of an officer's time among the various types of service—visits to homes and schools, travel, street work, and unemployed time.

The daily service record is likewise too general to be of great value in supervision, the only details called for being "*number of visits made,*" "*number of cases closed,*" "*number of truants returned to school,*" and "*number of non-attendants placed in school.*"

### III. Lack of Uniformity in Procedure and in Presentation of Results

In the foregoing discussion it has been shown that the weekly, monthly, and annual reports prepared by the various officers, by reason of their incompleteness, inaccuracy, and lack of uniformity, fail to provide an adequate basis for judgment concerning the methods employed and results accomplished in the service. Without reliable and complete information as a guide to practice, it is only natural to expect that the methods and procedure in current work will vary as widely as the opinions, interests, and efficiency of the personnel of the compulsory attendance service.

The results of the present inquiry fully confirm this natural expectation. The investigation shows that few specific problems of administration are met in a uniform way by district superintendents. In such matters as the supervision of attendance officers, the prevention of truancy and irregular attendance, conduct of hearings, placing of pupils on probation in the same or different schools, enlisting the support of teachers, principals and charitable societies, supervision of pupils placed on probation, recommendation for commitment, prosecution of parents and children, and interpretation of the official regulations, each district superintendent is left to the guidance of his own limited experience, and to such suggestion as he may receive incidentally from professional colleagues.

#### Investigation and Treatment of Cases

In order to ascertain the extent to which there is agreement or disagreement among district superintendents, as to methods prescribed for the ordinary current handling of cases of irregular attendance, tru-

ancy and other forms of delinquency, the 23 district superintendents were requested to make statements in answer to a series of questions submitted to them.

Twenty of the district superintendents submitted replies which have been digested and summarized as a statement of prescribed practice. On certain points involved supplementary data have been obtained from the records of attendance officers and district superintendents, to serve as a test of the extent to which prescribed practice is actually followed.

Much of the matter included under this heading might appropriately have been included in the preceding discussion of subsidiary records and reports. It is desirable, however, to bring together at one point all the material having to do with the procedure of principals and attendance officers in the actual work of investigation and treatment of cases.

Summaries, with supplementary data, are here presented, under the successive headings contained in the questionnaire:

### 1. Preliminary investigation by principals.

*Question.—What specific instructions have principals regarding the investigation of cause of absence before referring a case to attendance officers?*

Instructions to Principals	Number of Districts
Careful investigation of every case.....	1
Inquiry among pupils, brothers, and sisters.....	4
Inquiry in school assembly.....	1
Regular teacher to make visits.....	4
Visiting teacher to make investigation.....	1
Communication to parent by messenger or letter..	3
Letter with stamped envelope to be used when advisable .....	1
Refer cases to medical inspector.....	1
Notify attendance officers at once in cases of strongly suspected truancy.....	2
(In a few cases principals are said to employ "truant squads" composed of older boys, to locate pupils suspected of truancy.)	

It is immediately apparent from these replies that there are no general, clearly defined standards of procedure for conducting preliminary investigations. The use of two post-card forms, however, seems to be somewhat general. The first of these, the "absence card," requests the parent to give the cause of absence and return the card; no return card, however, being supplied. The second or "law" card contains an extract from the compulsory education law; notifies the parent that his child is not attending school as the law requires; and requests that the matter receive immediate attention. There is little agreement among the su-

perintendents in the method of using these cards, as a summary of the replies shows:

Days Elapsing Before Cards Are Sent.	No. of Districts.
First day .....	3
Second day .....	2
Third day .....	2
No regular time .....	13

Number of Cards Sent	
One card .....	4
Two cards .....	5
Three cards .....	5
Not stated .....	6

In case no satisfactory explanation of absence is received from the parent in response to these cards of inquiry, the case is referred to an attendance officer for investigation. The following tabulation of 1,315 cases, chosen at random from the reports of six attendance officers, shows the variation in the period of absence which is allowed to accumulate before cases are so referred.

**Table VII—Length of Absence Before Cases Were Referred to Attendance Officers**

(Analysis of 1,315 Original Entries)

District	Attendance Officer	Total No. Cases	DISTRIBUTION OF CASES BY LENGTH OF ABSENCE									
			NUMBER OF CASES					PER CENT. OF CASES				
			1-5 days	6-10 days	11-15 days	16 days and over	No data	1-5 days	6-10 days	11-15 days	16 days and over	No data
2-3	G	280	166	76	14	16	8	59.	27.	5.	5.	2.9
10-11	M	219	111	62	18	21	7	50.	28.	8.	9.	3.2
1-9	C	206	59	68	28	40	11	28.	33.	13.	19.	5.3
6-7	A	270	35	52	31	105	47	12.	19.	11.	38.	17.4
4-5	J	114	18	23	19	50	4	15.	20.	16.	43.	3.5
31-34	B	226	88	45	12	44	37	38.	19.	5.	18.	16.4
Total.....		1,315	477	326	122	276	114	36.	24.	9.	20.	8.6

Besides the fact of very wide variation in practice shown in this table, it will be noted that in 114 (8.6 per cent.) of the cases there were no data available by which the length of absence at the time of reference could be determined.

Of the 1,315 cases included in the foregoing table, 395 were reported by attendance officers as having been absent without lawful excuse. As these are presumably the more serious and difficult cases, they have been tabulated separately, with a view to ascertaining the periods of absence that were allowed to accumulate before the cases were referred to attendance officers for investigation.

**Table VIII—Length of Absence Before Cases Were Referred to Attendance Officers**

(Analysis of 395 Cases of Absence Without Lawful Excuse)

District	Attendance Officer	Total No. Cases	DISTRIBUTION OF CASES BY LENGTH OF ABSENCE									
			NUMBER OF CASES					PER CENT. OF CASES				
			1-5 days	6-10 days	11-15 days	16 days and over	No data	1-5 days	6-10 days	11-15 days	16 days and over	No data
2-3	G	105	81	13	4	5	2	77.	12.	3.8	4.8	1.9
10-11	M	69	42	15	4	5	3	60.	21.	5.8	7.2	4.4
1-9	C	69	25	22	6	12	4	36.	31.	8.7	17.4	5.8
6-7	A	60	15	18	8	18	1	25.	30.	13.3	30.0	1.7
4-5	J	36	9	8	6	13	0	25.	22.	16.7	36.1	...
31-34	B	56	25	7	3	12	9	44.	12.	5.4	21.4	16.1
Total.....		395	197	83	31	65	19	49.	21.	7.8	16.4	4.8

It will be noted in this table that in about 25 per cent. of the cases a period of absence exceeding ten days was allowed to accumulate before the cases were referred to attendance officers, and that in about five per cent. of the cases no record appears of the length of absence at the time the cases were referred. As in the preceding table, the wide variation among these six attendance officers is a matter for serious consideration.

## 2. Information given by principals in referring cases.

*Question.—What information is a principal required to give in referring a case to an attendance officer?*

A certain measure of uniformity is given to this requirement by reason of the fact that one of three blank forms is almost invariably used. Very generally, in boroughs other than Brooklyn, a form is in use which requires the principal to enter on a separate card for each case the *name, age, grade, street number and floor, date, and school number*, with spaces for "*card number*" and "*remarks*." In the central part of this card form are four blank lines for the officer's report with date and signature. At



the bottom are spaces for date of pupil's return and the principal's signature.

This card is approximately 3 by 5 inches in size, but is cut slightly larger than the standard filing card of similar dimensions. Consequently it cannot readily be filed in standard filing cases, and is a source of constant annoyance. The card is of unnecessarily heavy weight, which makes requirement for a larger amount of filing space than would be required by lighter stock. No provision is made for the use of a code of abbreviated symbols or check marks in making the entries. The required data must, therefore, be written out in full, with resulting loss of time in clerical labor. The small space allowed for the attendance officer's report, furthermore, encourages fragmentary and unintelligible entries, such as "will return," "not there," unavoidable reasons," "detained at home," etc.

In one superintendent's districts (6 and 7) in Manhattan, a modification of this form has been introduced by the district superintendent which permits principals to make duplicate records at one writing by the carbon process. This form calls for "dates of absence" instead of "number of days absent," as on the regular form furnished by the central office. No provision, however, is made for the signature either of the principal or of the attendance officer, an omission which leaves the way open to careless and confusing practice. The carbon duplicate in this district is retained by the principal as a controlling record, the original being to the attendance officer as a notification.

Somewhat generally in Brooklyn districts there is in use a form printed on postal cards providing for ten cases on each card with entries in columns headed, *name of child; age; name of parent or guardian; residence; number of days absent*. Space are provided for entering absence or previous record, or for entries by the attendance officers of date, the principal's signature, and the school number. The spaces on the form are so small that the names and residences are either cramped or incomplete. There is no provision for information as to causes of absence or of the results of investigation.

All of these forms limit the information furnished by principals to the most obvious and superficial facts regarding each child. Nothing, for example, is contemplated in the forms as to the scholarship, conduct, general attitude, previous record for attendance, and other conditions surrounding each case which might furnish attendance officers with the clues necessary to the intelligent understanding and treatment of the children. In several cases, where apparently the regular forms were not available, it was found that slips of paper and blank cards had been used in large number by principals, and a part of even the meager information called for by the printed forms was lacking.

### 3. Record maintained by principals concerning cases referred.

*Question.*—*What record is a principal required to keep in his own office regarding each case referred?*

"Elementary school record number 4," otherwise known as the "truant book" or "day book," is in general use for this purpose. This is in conformity with Section 3 of the by-laws of the Board of Education, which requires that "the principal of every school shall keep a record, in a register provided for that purpose, of all children of school age who have been reported to the attendance officer, together with an accurate record of the disposition of each."

This record requires the duplication of essentially the same entries that are made on the cards sent to attendance officers, and of the reports made by Attendance Officers upon the results of investigations. This unnecessary repetition of records is carried still further in the records that attendance officers are required to keep in their "note books" and in special files of card forms for certain types of cases.

### 4. Methods employed in referring cases for investigation.

*Question.*—*Which of the following methods are followed by principals in referring cases for investigation?*

- (1a) Written notice.
- (1b) Oral notice.
- (2a) Notice by mail.
- (2b) Notice by direct interview.
- (3a) Direct to attendance officers.
- (3b) Direct to district superintendent.

Six different combinations are reported in the replies. Five use written notice by mail to the attendance officer; 4 use oral and written notice to the attendance officer; 2 use written notice direct to the district superintendent; 1 uses oral and written notice to the district superintendent; 2 use written notice to both district superintendent and attendance officer; 6 use both oral and written notice to either attendance officer or District Superintendent.

### 5. Times at which cases may be referred.

*Question.*—*Are special times designated at which principals are to refer cases for investigation?*

Here again there are marked differences in practice. Four refer cases weekly; 4 refer cases weekly or oftener; 2 refer cases bi-weekly; 2 refer cases bi-weekly and urgent cases oftener; 2 refer cases at the regular visit of the attendance officer to the school, and urgent cases oftener; 6 refer cases at no special time.

**6. Means for informing principals as to the results of investigations. —**

*Question.*—*By what means is a principal informed concerning the results of each investigation?*

The means employed are reported as follows by the district superintendents: Five districts use written reports on cards; 3 districts use written reports; 2 districts use reports in the record book (one of these requires entries to be in officer's own handwriting); 2 districts use written report and oral statement; 4 districts use "reports," not designating the kind; 1 district uses alternative methods, as follows: Pupil brings card from attendance officer; written report on list returned by mail; list presented personally by officers; oral report by officers to principal.

**7. Method of reporting the return of truants and absentees.**

*Question.*—*How does a principal report upon a truant or absentee returned to school?*

The twenty replies show the following variations among the districts: Ten use written reports on cards; 3 use written reports on cards or oral report; 1 uses written reports on cards and an entry in book; 1 uses oral and written reports; 2 use "reports to attendance officer"; 1 requires the attendance officer to examine the truant book; 1 reports to the attendance officer at the end of each month all children absent 15 days during the month; 1 does not state the method employed.

In those districts where the card form for individual cases is used by principals in referring cases to attendance officers, the usual practice is for the attendance officers to report back to the principal on the same form upon the return of the child to school, and for the principal to enter upon this card the date of the child's return with his own signature and to return it to the attendance officer.

In districts using the postal card form for referring cases to attendance officers, a so-called "voucher" is used by principals in notifying the attendance officer of the return of children to school. This voucher form is a card providing space for several names, with the *age, name of parent or guardian, residence, and number of days' absence* of each child reported. The filling out of this card occasions further multiplication of clerical entries, which could easily be avoided by a proper system of duplication by carbon process.

**8. Distribution of cases among Attendance Officers.**

*Question.*—*On what basis are cases distributed among Attendance Officers?*

The general practice is to assign all cases from designated schools to a single attendance officer, the only exception being one district, which distributes cases on the basis of sex. Most of the replies indicate a plan of distributing cases equitably by "size of schools and territory,"

by "school population," by "difficulty of work," by "number of cases," etc. On this point, however, the replies are not sufficiently specific to be summarized briefly.

#### IV. Delay in Reporting

In the questionnaire submitted to the district superintendents information was requested concerning the length of time that is allowed after a case was referred to an attendance officer before the officer is required to make his report. Most of the replies indicate a definite time allowance for investigation and report, varying from one day to one week. The requirements given in the replies are as follows:

Number of Districts	Time Within Which Reports Are Required
9	1 week
1	5 days
4	2 or 3 days
1	No set time; average less than 3 days
1	If possible, within 48 hours
1	On completion of investigation, usually same day
2	Promptly
1	As soon as possible

In order to test the actual practice regarding the length of the period between the time when cases are referred by school principals and the time when reports are rendered by attendance officers, an analysis was made of the original records of 1,315 cases investigated by six attendance officers, both the officers and the cases being chosen entirely at random. To facilitate comparison, the results of this analysis are presented in the following double table, the number of cases being distributed at the left, and the percentages at the right:

**Table IX—Length of Interval Between Reference of Case and Attendance Officers' Reports**  
(Analysis of 1,315 Original Entries)

District	Attendance Officer	Total No. Cases	DISTRIBUTION OF CASES BY LENGTH OF INTERVALS									
			NUMBER OF CASES					PER CENT. OF CASES				
			1-5 days	6-10 days	11-15 days	16 days and over	No data	1-5 days	6-10 days	11-15 days	16 days and over	No data
2-3	G	280	254	8	4	1	13	90.	2.9	1.4	.4	4.6
10-11	M	219	197	9	1	1	11	90.	4.1	.5	.4	5.0
1-9	C	206	138	31	4	1	32	67.	15.1	1.9	.5	15.5
6-7	A	270	67	96	86	...	21	24.	35.6	31.8	...	7.8
4-5	J	114	28	12	3	10	61	24.	10.5	2.6	8.8	53.5
31-34	B	226	224	1	...	...	1	99.	.5	...	...	.5
Total.....		1,315	908	157	98	13	139	69.	11.1	7.4	.9	10.5

The administrative weakness of permitting district superintendents and individual attendance officers to follow their own standards is strikingly illustrated by the percentages in this table. One officer reports 99 per cent. of his cases within five days, while two others report only 24 per cent. within the same period. The unreasonably long delays in certain districts suggest the need for daily reports and strict field supervision, as provided for in the plan recently adopted for trial in four districts on the recommendations of the Committee on Special Schools.

Not only is this wide variation true of the total number of cases selected for study, but it is found also in the cases of pupils absent without lawful excuse. The tabulation of these 395 special cases follows:

**Table X—Length of Interval Between Reference of Cases and Attendance Officers' Reports**

(Analysis of 395 Cases of Pupils Absent Without Lawful Excuse)

District	Attendance Officer	Total No. Cases	DISTRIBUTION OF CASES BY LENGTH OF INTERVALS									
			NUMBER OF CASES					PER CENT. OF CASES				
			1-5 days	6-10 days	11-15 days	16 days and over	No data	1-5 days	6-10 days	11-15 days	16 days and over	No Data
2-3	G	105	94	2	2	...	7	89.5	1.9	1.9	...	6.7
10-11	M	69	66	1	...	...	2	95.7	1.5	...	...	2.8
1-9	C	69	47	13	...	...	9	68.1	18.9	...	...	13.0
6-7	A	60	12	18	29	...	1	20.0	30.0	48.3	...	1.7
4-5	J	36	11	1	...	3	21	30.6	2.8	...	8.3	58.3
31-34	B	56	55	...	...	...	1	98.2	...	...	...	1.8
Total.....		395	285	45	31	3	41	72.1	11.3	7.8	0.7	10.3

Tables XI and XII show a similar variation in the length of time taken by attendance officers for final settlement of cases referred to them. These tables again emphasize the importance of developing effective methods of supervision and control over the current work of attendance officers. Properly utilized daily reports upon preliminary investigations and upon final disposition of cases would certainly go far toward facilitating such control.

**Table XI—Length of Interval Between Reference of Cases and Final Disposition of Them**  
(Analysis of 1,315 Original Entries)

District	Attendance Officer	Total No. Cases	DISTRIBUTION OF CASES BY LENGTH OF INTERVALS									
			NUMBER OF CASES					PER CENT. OF CASES				
			1-5 days	6-10 days	11-15 days	16 days and over	No data	1-5 days	6-10 days	11-15 days	16 days and over	No data
2-3	G	280	157	42	19	45	17	56.	15.	6.	16.	6.
10-11	M	219	88	43	21	43	24	40.	19.	9.	19.	11.
1-9	C	206	76	40	34	30	26	36.	19.	16.	14.	12.
6-7	A	270	34	34	12	7	183	12.	12.	4.	2.	67.
4-5	J	114	33	8	10	30	33	29.	7.	8.	26.	28.
31-34	B	226	...	...	...	...	226	...	...	...	...	100.
Total.....		1,315	388	167	96	155	509	29.5	12.7	7.3	11.7	38.7

The figures under "*no data available*" in the preceding tables indicate either defective methods of investigation or laxity of supervision which must seriously interfere with the efficiency of the service. In two instances, it will be noted, about 17 per cent. of the records fail to show the length of absence at the time cases are referred to attendance officers (Table VII). In another instance an officer fails in over one-half of his cases to give data from which can be determined the length of time intervening between the reference of cases and the officer's report upon his investigation (Table IX). One officer gives no data in any of his cases from which a supervising officer can determine the length of time between the reference of a case and the final disposition of it (Table XI).

**Table XII—Length of Interval Between Reference of Cases and Final Disposition of Them**  
(Analysis of 395 Cases of Pupils Absent Without Lawful Excuse)

District	Attendance Officer	Total No. Cases	DISTRIBUTION OF CASES BY LENGTH OF INTERVALS									
			NUMBER OF CASES					PER CENT. OF CASES				
			1-5 days	6-10 days	11-15 days	16 days and over	No data	1-5 days	6-10 days	11-15 days	16 days and over	No data
2-3	G	105	73	13	5	11	3	69.	12.	4.	10.	2.
10-11	M	69	35	14	5	10	5	50.	20.	7.	14.	7.
1-9	C	69	29	15	9	13	3	42.	21.	13.	18.	4.
6-7	A	60	19	17	9	7	8	31.	28.	15.	11.	13.
4-5	J	36	13	2	3	6	12	36.	5.	8.	16.	33.
31-34	B	56	...	...	...	...	56	...	...	...	...	100.
Total.....		395	169	61	31	47	87	42.7	15.3	7.8	11.9	22.

## V. Inadequate Basis for Administrative Control

Responsibility for the enforcement of the compulsory education law, as we have seen, rests jointly upon the Superintendent of Schools, the Board of Superintendents, and the Associate Superintendent assigned to the compulsory attendance service. Although these officers may be able occasionally to study individual problems at first hand for administrative purposes, they must necessarily depend in the main upon periodical reports giving classified and digested information, summarizing the various activities of the compulsory attendance service. Upon this kind of material they must base their judgment concerning work undertaken, results accomplished, losses incurred, needs to be met, tendencies to be checked, and proposals to be approved or rejected. It is apparent, therefore, that, just so far as these reports are accurate and complete or as they are misleading and fragmentary, the basis for administrative judgment and control will be broad and stable or partial and unsound.

### 1. Administrative Importance of the Annual Report

The most important source of information for administrative officials is the annual report submitted by the Associate Superintendent to the City Superintendent of Schools. It not only furnishes the basis for official appraisal and forecast and serves as the working guide for administrative officers but is the most significant report of progress available for the information of supervisory officers, for the rank and file of employees in the service and for citizens, tax payers, teachers, and parents who are interested in the effective and economical management of this branch of the educational system.

In the main, the annual report consists of a summary statistical statement obtained through combining by addition the records of the 23 district superintendents. Upon these figures the Associate Superintendent bases his comments, interpretation and recommendations regarding the work over which he has administrative control.

This annual statistical summary is presented in five sections under the following headings:

1. Work of attendance officers in compelling attendance. Commitments to truant schools and paroles therefrom.
2. Arraignment of delinquent pupils before district superintendents. Probation work and results.
3. Enforcement of compulsory education law by courts.
4. Cases of violation of both the labor law and the compulsory education law.
5. Action of children's courts.

The first section of the summary is here reproduced as a basis for criticism and suggestion.

**Work of Attendance Officers in Compelling Attendance Upon Public and Private Day Schools, and Public Evening Schools. Commitments to Truant Schools, and Paroles Therefrom by the City Superintendent of Schools**

	1909-10	1910-11		
		Boys	Girls	Total
<b>1. Whole number of cases referred to attendance officers for investigation:</b>				
(a) By public schools.....	142,842	87,371	43,679	131,050
(b) By parochial schools.....	10,843	7,701	3,002	10,703
(c) By other schools and persons.....	13,694	16,669	7,485	24,154
(d) Investigated on officer's initiative...	8,156	6,244	1,610	7,854
Total.....	175,805	117,985	55,976	173,961
<b>2. Total number of cases investigated.....</b>	175,805	.....	.....	174,919
<b>3. Number of different reported cases of truancy investigated.....</b>	14,661	.....	.....	11,488
<b>4. Number of such cases reinvestigated.....</b>	6,755	.....	.....	6,269
<b>5. Number of <i>different</i> children found by attendance officers to have been truants five days or more during the year.....</b>	7,244	5,801	778	6,579
<b>6. Number of such truant children enrolled in public schools:</b>				
(a) Full time regular classes.....	4,946	4,119	586	4,705
(b) Part time regular classes.....	263	243	14	257
(c) Special classes.....	978	583	55	638
(d) Ungraded classes.....	162	113	2	115
Total.....	6,349	5,058	657	5,715
<b>Enrolled in private schools:</b>				
(a) Parochial schools.....	753	655	95	750
(b) Corporate schools.....	139	82	21	103
(c) Other private schools.....	3	6	5	11
Total.....	895	743	121	864



	1909-10	1910-11		
		Boys	Girls	Total
7. Number of times such truants were returned to school by attendance officers.....	14,017	.....	.....	15,048
8. Number of children committed to truant schools by City Superintendent:				
(a) Truants.....	150	132	.....	132
(b) Suspended incorrigibles.....	20	16	.....	16
Total.....	170	148	.....	148
9. (a) Number of children paroled by City Superintendent from truant schools and institutions during the year.....	585	761	2	763
(b) Number who respected parole.....	444	564	2	566
(c) Number who violated parole and were returned to truant schools...	141	197	.....	197
10. Number of cases of truancy probably due to neglect of parents.....	2,154	2,461	508	2,969
11. Number of cases of children incorrigible in school, probably due to parental neglect or lack of control.....	170	234	11	245
12. Number found to be non-attendants and placed in school.....	2,683	.....	.....	3,912
Number of cases of non-attendance due to—				
(a) Indifference of parents.....	1,390	1,053	666	1,719
(b) Poverty.....	391	273	182	455
(c) Sickness in family.....	297	344	271	615
(d) Temporary necessity.....	605	812	311	1,123
13. Number of visits of attendance officers:				
(a) To homes.....	189,731	.....	.....	189,381
(b) To schools.....	33,136	.....	.....	34,767
(c) To stores and factories.....	5,952	.....	.....	7,566
(d) To courts.....	3,012	.....	.....	3,142
(e) To other places.....	6,578	.....	.....	6,961
Total.....	238,409	.....	.....	241,817

	1909-10	1910-11		
		Boys	Girls	Total
14. (a) Number of visits of officers to evening schools.....	506	.....	.....	487
(b) Number of absences from evening schools investigated.....	4,458	4,494	217	4,711
(c) Number of visits to homes of evening school pupils.....	4,560	.....	.....	4,973
(d) Number of visits to business places where evening school absentees were employed.....	363	.....	.....	572
(e) Number of truants and absentees returned to evening school.....	2,814	3,331	90	3,421
15. Number of cases of children of school age referred to attendance officers as "moved," "transferred," "non-attendants," etc., but who could not be found after diligent search.....	.....	5,748	3,431	9,179

The data included in this table suggest problems which not only affect the vital interests of several thousand individual boys and girls in New York, but are of serious social significance to the community as a whole. Properly analyzed, classified, and interpreted, the results of 175,000 investigations into the home conditions, economic status, physical welfare, and school progress of New York's less favored school children ought to serve as an invaluable commentary upon the city's program of education, health conservation, charitable relief, and police protection.

## 2. Inadequacy of Unanalyzed Totals

The statistical summary of the annual report consists of totals, under each heading, for the city at large. As previously shown, no provision is made for exhibiting the subsidiary totals for the several administrative districts under the supervision of district superintendents.

The analysis and comparative statement presented in Tables I-VI of the present study show conclusively that the totals of the published report are not a true index of conditions and methods prevailing in the several districts over which district superintendents have supervisory control. The chief administrative value of such a statistical summary should be to raise specific questions; to answer such questions so far as the necessary facts are available; and to serve as a point of departure for further inquiry where supplementary facts are shown to be needed. As previously noted, no systematic practical use is made of the annual reports of district superintendents for purposes of administration and control; the details being merely merged by clerical assistants into the report of the

associate superintendent. The comments accompanying the statistical tables in the associate superintendent's annual report are, in practically all instances, based upon these undistributed totals, which are quite as likely to confuse as to clarify the real issues which administrative and supervisory officers are called upon to face.

### 3. Defective Arrangement of Statistical Data

Entirely apart from the unreliability of the data entering into the totals of the published report and the inadequacy of the unanalyzed totals, there are serious defects in the arrangement of the items which conceal or obscure the vital problems of administration.

The grouping of the items under five general headings does, in a measure, meet the requirements that are here suggested; but it does not enable the reader to grasp quickly the complete range of each group of facts presented. For example, there is nowhere in the report a complete statement of all cases investigated by attendance officers. The first item in the report, "*Whole number of cases referred to attendance officers for investigation*," apparently includes only those cases that come to attendance officers through the regular channels of public, parochial, and other schools and through the initiative of attendance officers themselves. While this classification accounts for a great majority of cases investigated, it does not appear to include cases received from the commissioner of immigration, the permanent census board, or the state department of labor, for the number of cases reported elsewhere in the report as having been received from these sources exceeds the total number reported here as having been referred "by other schools and persons."

Similarly the results of investigations are not given completely at any one place. It is therefore impossible for the reader to be certain that the entire number of cases received for investigation is accounted for and into just what groups the cases are separated. The total number of cases reported as having been investigated by attendance officers is 174,919. An examination of the report for the details included in this large number shows the following items, though it is not clear in all cases that the items are mutually exclusive:

Different reported cases of truancy investigated.....	11,488
Number of such cases re-investigated.....	6,269
Cases of children incorrigible in school probably due to parental neglect or lack of control .....	245
Found to be non-attendants and placed in school.....	3,912
Absentees from evening schools investigated.....	4,711
Children who could not be found after diligent search.....	9,179
Cases taken to court.....	913
Children discharged from employment by State Department of Labor, and investigated by attendance officers.....	1,768
Children brought to court on charge of truancy only.....	894
Children brought to court on charge of truancy and vagrancy.....	89
Cases referred to Department of Health and investigated .....	690
Cases referred by charitable societies and investigated.....	99
Cases referred by various institutions and investigated .....	591
Miscellaneous complaints investigated .....	206
Cases referred by the Commissioner of Immigration and investigated.....	110
Total (not given in the published report).....	41,164

This total of 41,164 includes all of the groups of cases included in the various totals of the superintendent's report which with any degree of clearness can be assumed to be included in the "total number of cases investigated." This leaves about 134,000 (77 per cent.) of the "total number of cases investigated" for which there appears to be no appropriate classification among the various items of the report showing results.

Similarly the "causes of absence" applying to the various groups of cases investigated are shown at many different places in the 18 tables of the report, but not summarized at any one point. It is therefore impossible to establish a balance between the groups of causes of absence and a total to which the aggregate of these separate causes of absence should agree.

It is likewise impossible to find an exact relationship between the number of cases upon which different kinds of action were taken by attendance officers, district superintendents, the city superintendent, and the courts, and definite totals within which such separate groups are included. There is, for example, no balancing account showing the disposition of the 6,579 different children found by attendance officers to have been truants five days or more during the year; although at different points in the report there are items which account in part for the final disposition of these serious cases. It is not clear from the reports how many of these children were summoned for hearings before the district superintendents, although the assumption may be that all of the 4,860 cases brought before district superintendents were from among the "five-day truants." Again, the 908 cases of truancy and incorrigibility taken to court were presumably included in the number brought before district superintendents, although this fact is not clear from the report.

Owing to this lack of clear correlation between inclusive totals and component subtotals, the impression given by the statistical tables is that of continuous lists of loosely connected items in which there is no method of grouping that gives at a glance the key to the meaning of the facts.

#### 4. Arbitrary Adjustment and Forced Totals

It has been shown that the value of the annual report as a source of information is seriously limited by the omission of important data; by unanalyzed totals; and by defective arrangement. Its value is further limited by inaccuracies which largely vitiate conclusions that might be drawn from the data presented. Clerical inaccuracies, most of them of slight extent, introduce an element of unreliability into the statistical summary which may, of course, be readily avoided in the future by the careful checking of the totals to the items of the district superintendents' reports. Of 55 items so checked in the preparation of Tables I-VI, 24 show discrepancies in addition.

More serious than such clerical inaccuracies, however, are the arbitrary adjustments which have been made in order to force balances that were assumed to be called for in certain groups of items. The most

serious instance of this sort, which was discovered in the examination of the district superintendents' annual reports, is connected with the second item of the fourth general division of the statistical report, relating to "Labor Law and Compulsory Education Law Cases."

Item 2 of this table, with its subdivisions, is as follows:

Number of children discharged from employment by the State Department of Labor and referred to the attendance officers for investigations:

Boys, —; girls, —; total, —.

- (a) Number of such cases investigated .....
- (b) Number of such children found to be illegally employed but attending school .....
- (c) Number of such children found to have been illegally employed and not attending school.....
- (d) Number of such children placed in school by attendance officers .....
- (e) Number of such children found to have been legally employed (16 years of age, or having employment certificates) .....
- (f) Number of cases not found.....
- (g) Number of such children illegally employed taken to court by attendance officers.....

The clerical force that summarized the annual reports of district superintendents acted on the assumption that subdivision (a) must equal the total of subdivisions (b)-(g). And yet it is obvious that items b-g cannot be mutually exclusive. For example, "children placed in school" in most instances must be included in the preceding item, "illegally employed and not attending school." Similarly children "not found" or "taken to court" might be included in any one of several preceding items. In 18 of the 23 district superintendents' annual reports, the totals of items b-g did not originally agree with the number of cases investigated. The entries under "number of cases investigated" in all of these reports were arbitrarily altered in the central office so that there should be such agreement; as shown in the table on page 707.

The total number of cases of children "referred by the state labor department," as originally given in the reports, was in turn arbitrarily changed to agree with the "number of cases investigated"; and the number of boys or girls or of both was so altered as to give a total that should agree with the arbitrarily adjusted total of cases referred. The total number of these cases investigated according to the original reports submitted by district superintendents was 1,625 instead of 1,768 as given in the annual report.

DISTRICTS	NUMBER OF CASES INVESTIGATED (SUBDIVISION a)		DIFFERENCE DUE TO ARBITRARY ALTERA- TION OF ENTRIES
	As Originally Given	As Arbitrarily Altered to Agree With Sum of Subdivisions b-g	
28, 30.....	87	98	11
4, 5.....	95	105	10
6, 7.....	57	59	2
8, 12.....	98	116	18
27, 29.....	64	75	11
13, 15.....	88	90	2
20, 21.....	74	89	15
31, 34.....	84	81	— 3
39, 40.....	54	90	36
10, 11.....	62	70	8
2, 3.....	47	67	20
14, 18.....	50	25	—25
23, 24.....	184	196	12
43, 44.....	39	41	2
41, 42.....	16	20	4
33, 35.....	85	89	4
25, 26.....	36	39	3
1, 9.....	72	85	13
Total.....	1,292	1,435	143

The discrepancy in this case between the true and the adjusted total amounts to 143, which is about 9 per cent. of the correct total; but, from the point of view of administrative practice and control, the importance of the matter is not primarily that of a vitiated total, however misleading this total may be. The real significance is rather in a point of view toward facts and administrative responsibility, and in a method of checking and controlling information upon which administrative judgment must rest, that will permit such adjustments to go undiscovered and unchallenged.

To the extent that these examples represent indifference on the part of clerical staff, investigators, supervisors, or administrative officers toward the facts which are assumed to be summarized in the statistical tables, any statement in the reports concerning work done and results accomplished is open to suspicion. No assumption is made, however, as to the extent of such an attitude in the compulsory attendance service. Obviously, if such indifference were at all general it would inevitably react upon the entire service by impairing the confidence and sincerity of every officer and employee in the organization.

### 5. Variation in Definition of Terms Employed

In several instances, the terms employed in the headings of the annual statistical report are variously defined and used by the district superintendents. The headings of four items in the first section of the annual report illustrate the variation.

Item 1 (c).—*"Cases referred by other schools and persons."*

Taken literally, this heading would not include cases received from certain miscellaneous sources such as the permanent census board, state labor department and private philanthropic agencies. The interpretation given by district superintendents to this item varies to such an extent that the total figure given in the annual report is of doubtful meaning and value. Four of eight district superintendents interviewed were uncertain as to just what cases were included in the item, and the associate superintendent in charge stated that no standard of interpretation had been established.

Item 3.—*"Number of reported cases of truancy investigated."*

There is no clear understanding as to the significance of this item. In districts 10-11 the number of cases reported under this heading agrees with the number of "different children found to be truant five days or more" (Item 5). In other districts the two numbers differ, though in some instances by a very narrow margin. The difference in interpretation depends apparently upon whether "different reported cases" is intended to include an individual more than once when repeated investigations have been made of his case.

Furthermore the term "reported" in the caption is interpreted variously; in some instances indicating "probable" or "suspected" truancy from the point of view of principals at the time cases are referred; in other instances "actual" truancy as determined by subsequent investigation. It seems likely, therefore, that this item (11,448 cases) in the annual report is extremely unreliable as an index of actual conditions in the schools. This difference in interpretation may account for the very wide range (1.8 per cent. to 15.9 per cent.) shown in column 12 of Table II.

Item 5.—*"Number of different children found by attendance officers to have been truant five days or more during the year."*

This caption raises the question whether or not a child absent less than five days is to be considered a truant. By some district superintendents the term "truant" is applied to "five-day truants" only; by others to any child absent without lawful excuse and without the knowledge and consent of parents, excluding those illegally detained at home. The term has no clearly defined and uniform meaning in the reports.

Item 7.—“*Number of times such truants were returned to school by attendance officers.*”

This heading is interpreted by one district superintendent (districts 4-5) to agree with the number of truants reported in Item 5. By some attendance officers the corresponding item in the weekly reports is assumed to mean the “greatest number of times any *one* truant was returned to school.” The item is therefore in a measure unreliable on its face.

## VI. Defects of Organization

Having reviewed the administrative defects due to lack of clearly defined standards in records and procedure and to the inadequate basis for administrative control, it is appropriate to consider the definition and distribution of duties or functions as related to personnel; that is, the *organization* of the compulsory attendance service. Reference to the organization chart and the brief outline of functions (Preliminary exhibits 2 and 3) will facilitate an understanding of this discussion.

It will be seen that the associate superintendent nominally having the direction of the compulsory attendance service is responsible to the board of superintendents by whom he is appointed as its committee on compulsory education. To the extent that the board of superintendents exercises actual as well as potential direction in matters concerning the management of the compulsory attendance service, the scheme of organization may be defined as the “committee system,” which, in any field of management, almost inevitably results in uncertainty and delay in reaching decisions and in putting plans into execution.

On the other hand, the associate superintendent is also responsible directly to the city superintendent of schools to whom the compulsory education law gives authority to “supervise the enforcement of this act.” The associate superintendent in many matters acts for the city superintendent, by authority delegated to him by his superior officer. In other matters, as in the commitment of children to truant and parental schools, the city superintendent has not delegated his authority but acts directly in each case. The weekly reports of attendance officers, for example, are addressed to the city superintendent. Much of the business of the central office is carried on in the name of the city superintendent, who theoretically approves the acts of the associate superintendent as of a subordinate officer. The city superintendent may and does, by intervention, disapprove specific acts of the associate superintendent. It would be regarded as entirely regular for the city superintendent to issue orders to any officer in the compulsory attendance service of subordinate rank, either directly or by passing the order down in sequence through successive grades of authority. From this point of view, the organization may be defined as belonging to the “military” type.

To the extent that the military type of control is consistently exer-



cised, the conditions are unfavorable to expert leadership; for such leadership is possible only when a properly qualified individual is placed in charge of each specific function or division of the service, with complete authority and responsibility for the direction of the field to which he is assigned. Under such a system of functional division of authority and duties, any given officer or employee would be subject to direction from as many supervisors as there were functions which he performed—one supervisor for each specific function—but he would not be subject to interference on the part of any one who was not expert in a particular function.

The division of the staff of attendance officers into a "newsboy squad," "court officers," "officers for special assignments," etc., so far as it goes, conforms to this idea of functional organization. Definite location of responsibility, however, is interfered with on the one hand by committee control and on the other by the possibility of an absolute or partial veto from the superintendent of schools.

It is obviously impossible for the city superintendent, the associate superintendent, or the district superintendents to exercise intelligent and expert judgment upon all of the varied problems that constantly arise in the discharge of functions so diverse as those of the compulsory attendance service. Yet this is precisely the responsibility which each of these officers under the present form of organization is required to accept. The weakness of this form of organization is still further emphasized when it is recalled that each one of the administrators and supervisory officers is responsible not only for the diverse functions related to compulsory education, but also for an even greater range of duties connected with the activities of kindergarten, elementary schools, vocational schools, high schools, teachers' training schools, vacation schools, recreation centers, and other divisions of the public school system.

Briefly summarized, then, *the specification and distribution of duties are not such as to fix responsibility definitely upon functional experts, to encourage initiative, and to limit the interference of non-expert authorities in the details of management.* More specifically the defects of organization are the following:

1. There is no one individual in the organization charged with complete authority and responsibility for general administrative control. The associate superintendent assigned to administrative direction, besides being subject to the administrative check of the city superintendent of schools, performs the functions of division superintendent and member of the board of superintendents.

2. The limits of authority and responsibility of each member of the organization are not clearly defined and described.

3. No adequate provision for field supervision and inspection of the work of attendance officers has been made. Supervision by district superintendents is necessarily incidental, by reason of the urgent and heavy responsibilities involved in general school supervision.



PROBATIONARY SCHOOL, P. S. 120, MANHATTAN. SHOPWORK CLASS.

This school is a detention school in which the program of studies and the methods of instruction and discipline are specifically adapted to the needs of habitual truants and other delinquent children.



This defect was admitted by the Board of Education in its resolution of April 24, as well as by the superintendent in his annual report for 1911. Even if district superintendents had ample time for the work, it is doubtful whether proper organization would hold them responsible for the supervision of attendance officers appointed and controlled by administrative officers at 59th street. According to the city superintendent's report, however, district superintendents are overburdened and are not now and will not in the future be able to give the necessary time to enforce the law.

4. Direct responsibility for the supervision of attendance officers assigned to court work and of the newsboy squad makes it necessary for the associate superintendent either to give considerable time to the details of this work which might be supervised by an officer of lower salary, or to reduce this supervision largely to such perfunctory routine as can be attended to by clerical assistants.

5. Public School No. 120, Manhattan, is entirely detached from the general organization of the compulsory attendance service, although it performs functions similar to those of truant and parental schools and has repeatedly been declared by the city superintendent and other school officers to have passed the experimental stage.

6. The census enumeration of children from 7 to 16 years of age, although intimately related to the investigation of causes of absence and capable of close and economical coöperation with the latter, is separately organized and managed.

7. The organization does not provide for specialization within the staff of attendance officers to correspond fully with the different functions to be performed; for example, there is no special provision made for such functions as coercive discipline, preparation and prosecution of court cases, and service of the kind emphasized by the privately maintained corps of visiting teachers.

8. Systematic provision has not been made for the most effective working relations with the department of health, the state labor department, and other public and private agencies actually or potentially coöperating with the compulsory attendance service. There is no evidence, so far as this inquiry has discovered, of a clearly defined program of functions to be performed by each of these related agencies.

## VII. Undue Emphasis of Police Functions

The compulsory attendance service, as at present organized and conducted, limits its functions very largely to the performance of police functions related to the *enforcement* of school attendance. Its investigations are directed chiefly to the *immediate explanation* and *checking* of truancy and irregularity, rather than to the discovery and treatment of deeper causes. This point of view is not only made evident by the emphasis, in the annual and current reports, which is placed upon the return of

children to school, arraignment of delinquent pupils, and prosecution of parents; and by the relatively small attention to analysis of family influences, physical and mental conditions of delinquents, and coöperation of various social agencies, but is distinctly stated by the superintendent of schools in his letter transmitting to the Board of Education the report on the enforcement of the compulsory education law for the year 1910-11. Commenting upon the relation of the work of attendance officers to that of "visiting teachers" he says, "The function of the former is to *cure* truancy; of the latter, not only to prevent truancy but to cure many other ills that arise in connection with exceptional pupils."

The mere statement of certain facts regarding the absence of pupils in regular classes for the half year ended June, 1911 (Table XIII), suggests questions of great significance regarding the present limited scope of the compulsory attendance service.

**Table XIII—Distribution of Pupils by Grade and Extent of Absence**

All Pupils in Regular Classes February-June, 1911  
(Data Collected by Committee on School Inquiry)

Grades	DISTRIBUTION BY EXTENT OF ABSENCE									
	Number					Per Cent.				
	10 days and less	11-20 days	21-30 days	31-40 days	41 days and over	10 days and less	11-20 days	21-30 days	31-40 days	41 days and over
						Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
1-A.....	17,215	8,708	5,010	3,188	8,891	40.0	20.2	11.6	7.41	20.6
1-B.....	28,342	10,800	4,938	2,489	3,263	56.8	21.6	9.9	4.9	6.5
2-A.....	24,826	7,743	3,240	1,612	2,186	62.6	19.5	8.1	4.0	5.5
2-B.....	29,970	8,063	3,130	1,572	1,873	67.1	18.0	7.0	3.5	4.1
3-A.....	27,841	6,865	2,690	1,190	1,594	69.2	17.0	6.6	2.9	3.9
3-B.....	30,157	7,146	2,684	1,257	1,667	70.2	16.6	6.2	2.9	3.8
4-A.....	26,943	6,445	2,494	1,194	1,497	69.8	16.7	6.4	3.0	3.8
4-B.....	28,057	6,575	2,552	1,159	1,566	70.3	16.4	6.3	2.9	3.9
5-A.....	25,420	6,285	2,424	1,148	1,546	69.0	17.0	6.5	3.1	4.2
5-B.....	25,312	5,958	2,293	1,083	1,389	70.2	16.5	6.3	3.0	3.8
6-A.....	23,144	5,396	2,069	944	1,320	70.4	16.4	6.2	2.8	4.0
6-B.....	22,530	4,974	1,783	780	1,067	72.3	15.9	5.7	2.5	3.4
7-A.....	20,537	4,088	1,501	666	875	74.2	14.7	5.4	2.4	3.1
7-B.....	18,854	3,655	1,167	514	601	76.0	14.7	4.7	2.0	2.4
8-A.....	16,638	2,828	925	318	403	78.8	13.4	4.3	1.5	1.9
8-B.....	16,620	1,983	491	183	268	85.0	10.1	2.5	.9	1.3
Total.....	382,406	97,512	39,391	19,297	30,006	67.2	17.1	6.9	3.3	5.2

About 90,000 children, it will be seen, were absent during this half year for at least one school month; 30,000 of these having been absent over two full school months. Yet only 6,579 children were reported by

attendance officers as having been truants for five days or more during the entire year. At a time when the attention of school officers is so largely directed toward plans for reducing non-promotion, retardation, and school mortality; when vast sums are being spent on special and ungraded classes and vacation schools, this contrast suggests broad possibilities for the extension and strengthening of attendance work.

The significance to the community of extending the attendance service beyond the mere control of truancy by police methods is further emphasized by the summary of facts regarding the relation of absence to non-promotion, presented in Table XIV.

**Table XIV—Whole Time Classes by Grade and Extent of Absence**

**Children Not Promoted June 30, 1911**  
(Data Collected by Committee on School Inquiry)

DISTRIBUTION BY EXTENT OF ABSENCE FOR SECOND HALF YEAR					
Grades	Absent 10 days or less	11 to 20 days	21 to 30 days	31 to 40 days	41 days and above
1-A.....	10.6%	13.4%	19.9%	28.8%	57.4%
1-B.....	7.1	10.5	14.1	19.6	35.3
2-A.....	7.6	10.8	14.6	20.2	32.0
2-B.....	6.4	10.2	13.5	19.6	32.3
3-A.....	7.1	11.7	16.5	20.7	36.0
3-B.....	6.3	10.4	15.1	21.4	35.6
4-A.....	6.7	11.7	15.8	24.7	41.6
4-B.....	6.2	11.6	16.3	25.3	44.1
5-A.....	6.8	12.5	19.7	28.1	47.3
5-B.....	6.1	12.0	19.3	28.7	48.9
6-A.....	6.3	13.8	20.3	30.9	50.3
6-B.....	6.4	12.9	20.2	31.7	54.9
7-A.....	7.7	15.8	24.8	31.3	59.3
7-B.....	6.9	15.9	22.1	39.1	57.7
8-A.....	7.3	14.8	22.4	38.0	59.9
8-B.....	2.8	17.8	25.0	22.4	32.8
Total.....	6.7%	12.3%	17.7%	25.6%	45.8%

See also Dr. Bachman's report on non-promotion.

Nearly one-half of the pupils who failed of promotion were absent over two-fifths of the school term, and 70 per cent. were absent from school at least thirty days during the half year. These data, furthermore, take account only of the pupils who failed of promotion on June 30; the 70,000 children who left school during the year being disregarded.

Important as it unquestionably is to discover and control truancy in its incipency, it is obvious that the occasional truant is not the only problem maker. A conservative program of attendance control must find effective means for dealing with the very large number of children

who, by sporadic absence for trivial causes, not only lessen their own chances for making satisfactory progress in school, but, by requiring an undue amount of the attention of teachers, handicap those pupils who are regular in attendance.

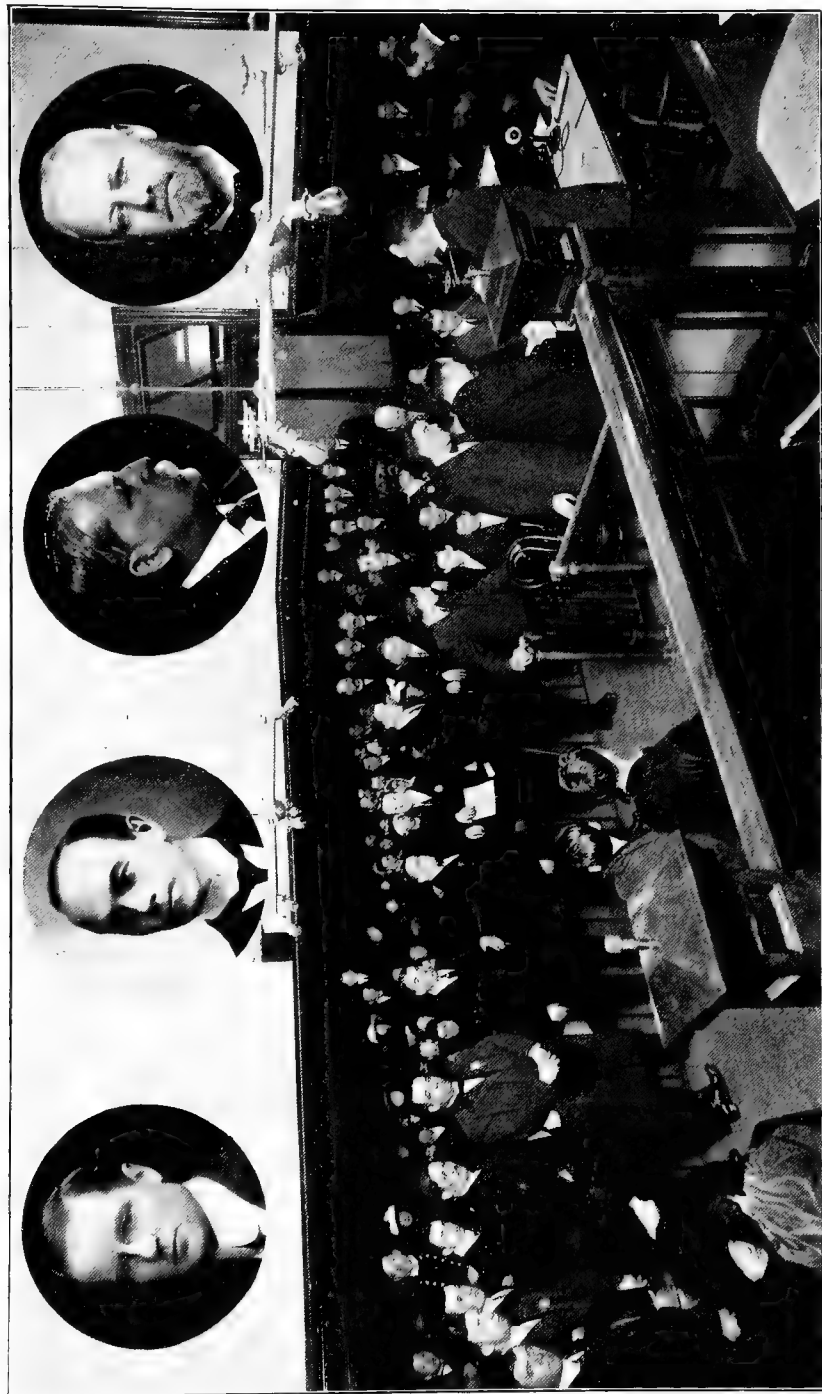
The direction to be followed in developing such a program is illustrated by the service performed during 1910-11 by the six visiting teachers employed by the Public Education Association. The results of this service are presented in a special report included as an appendix to the city superintendent's report for 1910-11 on the enforcement of compulsory education. Of nearly one thousand cases investigated by the visiting teachers, only 15 per cent. were such as would normally have been referred to attendance officers. The complaints concerning the large majority of the children indicated incipient truancy. Efforts were accordingly made to discover and correct the conditions, both at home and in school, that lay at the bottom of irregular attendance and unsatisfactory progress in school, thereby checking truancy at its source.

The report upon the work of the visiting teachers, supplementing the reports of attendance officers, indicates that the greater part of irregular attendance not due to sickness is directly related to parental indifference, ignorance, neglect, or poverty. A constructive program for controlling attendance must therefore be directed largely to the enlisting of parental coöperation and the improvement of those conditions; steps impossible to accomplish by the mere exercise of police functions.

Where actual want is discovered, it is, of course, necessary to invoke the aid of suitable charitable organizations. The most frequent and the most difficult demand in improving home conditions, however, is the education of parents. In many cases they must be led to see the necessity of securing for their children better living quarters, improved diet, longer hours of sleep, or less home work. It is often necessary, also, to make careful school adjustments. These may involve the changing of teachers; the organization of special schools and classes; and even a possible general revision of curriculum to answer the needs of pupils for whom the conventional school activities are ill adapted.

### VIII. Suggestions for the Development of a Broader Program

If the function of the compulsory attendance service be thus broadly and liberally interpreted, and its work extended beyond dealing with superficial and immediate *occasions* of irregular attendance, attendance officers may be expected to deal more intelligently and effectively with the attendance problem. Even assuming, for the moment, that the function of attendance officers is to "cure" truancy, the means of cure are so intimately related to the means of prevention—both involving the constant consideration of active and fundamental causes such as physical and mental defects, economic pressure, and family demoralization—that the combination of the two functions of prevention and cure is an indis-



CHILDREN'S COURT IN SESSION, BOROUGH OF MANHATTAN.

There are four children's courts in the City of New York, one in each of the following boroughs: Manhattan, Brooklyn, Queens and Richmond. The four judges shown in the above inserts sit in each of the courts, rotating regularly throughout the boroughs.

JUDGE FRANKLIN C. HOYT.

JUDGE MORGAN M. L. RYAN.

JUDGE JOHN B. MAYO.

JUDGE ROBERT J. WILKIN.





pensable as well as entirely practicable measure. From the point of view of organization and management, it is suggested that an effective division of functions would be the following:

- a. Preliminary investigation and report.
- b. Preventive treatment.
- c. Disciplinary treatment.
- d. Corrective (institutional) treatment.

The practical application of such a differentiation of functions is considered in proposal number 5 of the following suggested plan for functional reorganization:

### **Functional Reorganization**

With a view to facilitating the economical and efficient performance of the functions involved in a complete and well-ordered attendance service, the following proposals are submitted:

1. That an organization, responsible to the Board of Education, be constituted—to be known as the “Attendance Bureau”—to which shall be assigned all functions directly concerned with (a) the enumeration of children of school age; (b) the determination of the fact of enrollment or non-enrollment of each child so enumerated; (c) the investigation of cases of non-enrollment and non-attendance; and (d) the prevention, treatment, and cure of truancy, non-attendance, and other irregularities of attendance.

2. That administrative responsibility be completely vested in a chief of the attendance bureau, who shall devote his entire attention to the problems of administration and who shall report directly to the city superintendent of schools.

3. That a district supervisor be placed in charge of the attendance service in each of the administrative districts into which the city is divided for the general management of the school system; and that such district supervisors be made responsible directly to the chief of the attendance bureau.

4. That district superintendents be given responsibility for conducting judicial hearings in such cases as may be brought before them on charges preferred by the supervising attendance officers; the decisions of district superintendents in such cases to be executed by the appropriate officers of the attendance bureau's staff; such decisions to be subject to review by the chief of the attendance bureau.

5. That the staff of the attendance bureau be organized, on a functional basis, into the following divisions:

#### **a. Division of Enumeration and Investigation.**

This division, it is suggested, should consist of approximately four staff members in each attendance district, whose duty it shall be—

- (1) To maintain a complete census of all children of school age residing in the respective districts; revising and amending such census currently and continuously.
- (2) To make preliminary investigation of all cases of non-attendance and irregular attendance referred to the attendance bureau, and to report promptly the most readily obtainable facts regarding each case investigated.
- (3) To maintain a list of children reported as moved, not found, or otherwise not accounted for, and to make systematic effort to account for all such cases before they are finally dropped from the record of cases under consideration.

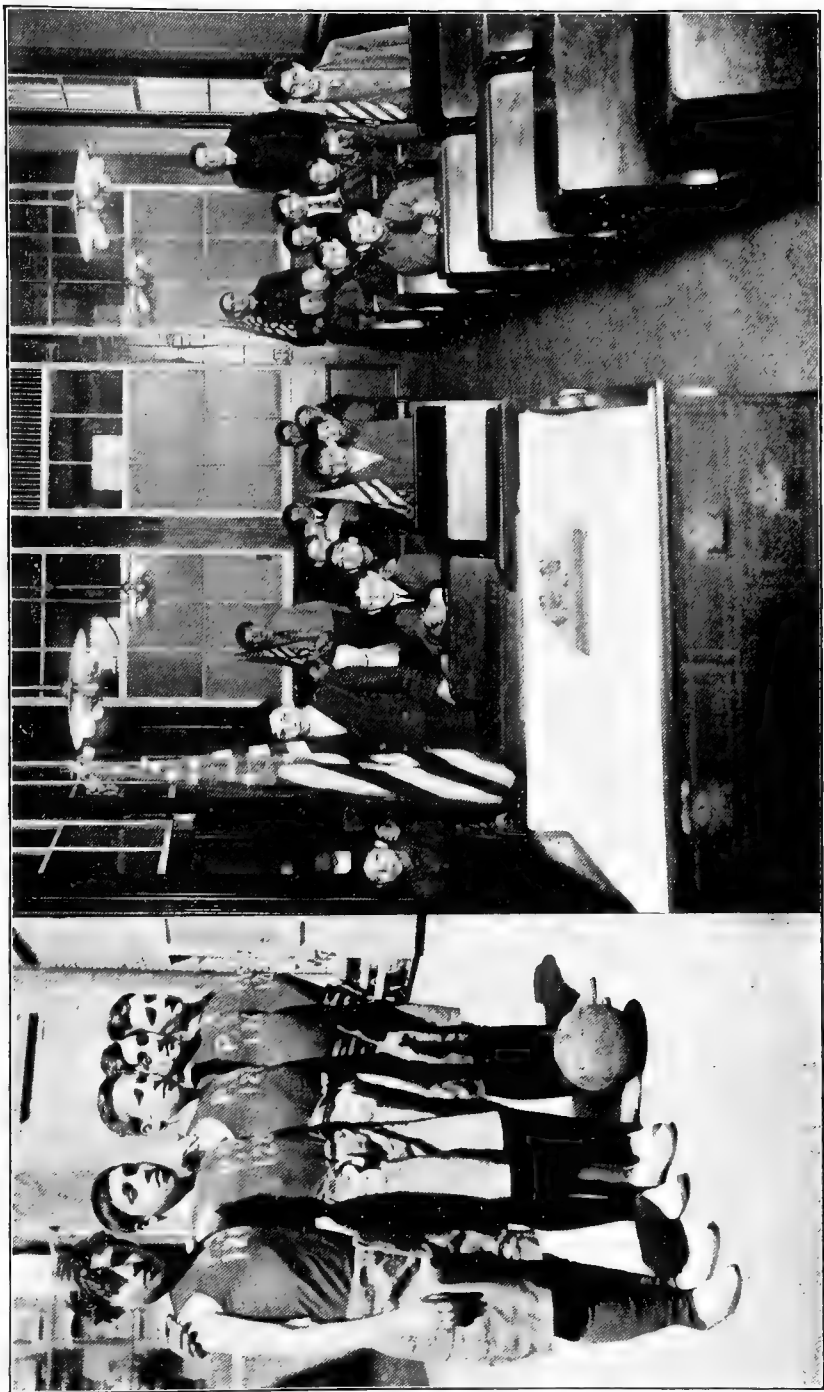
**b. Division of Prevention and Probation.**

The personnel of this division should be selected with special reference to qualifications for effective investigation and interpretation of facts relating to economic and social conditions. The staff of this division, it is suggested, should consist of at least two members for each attendance district, with the following duties:

- (1) To make further and more exhaustive investigation of such cases of non-attendance, irregular attendance, and incorrigibility as may be referred to them by supervising attendance officers, after the preliminary investigation, with the purpose of ascertaining facts regarding the physical, mental, and social conditions affecting each case.
- (2) To make, in each case so investigated, a diagnosis of fundamental conditions which account for the irregularity involved; to outline a plan of treatment for each case; and to take the necessary steps to obtain the intelligent coöperation of principals, teachers, parents, physicians, dispensaries, charitable societies, and other individuals and agencies which may be needed in the proper treatment of each case.
- (3) To confer with and advise parents, teachers, principals, and children in cases of irregular attendance, incipient truancy, and troublesome conduct growing out of strained relations between pupils and teachers and other special causes.
- (4) To act as probation officers and advisers in cases of children placed on probation by district superintendents and children's courts, and of children paroled from truant and parental schools.

**c. Division of Discipline and Prosecution.**

The staff of this division should consist of at least ten officers for the city at large, responsible directly to the chief of the attendance bureau, with the following duties:



P. S. 120 (PROBATIONARY SCHOOL, MANHATTAN).

Photograph shows color guard drill. Basketball Team of Probationary School Showing Physical Care of Truants.



- (1) To deal with such cases as may be referred by supervising attendance officers to the chief of the bureau, in which the methods of the division of prevention and probation have failed to accomplish desired results—cases requiring the application of coercive and disciplinary measures either to children or to their parents.
- (2) To prepare all cases brought against children or parents for violation of the attendance laws, and to prosecute such cases in the courts.
- (3) To coöperate with the police department in the enforcement of the newsboy law.

**d. Division of Correction.**

This division should include such institutions for the temporary detention or permanent custodial care of children as may be necessary for the proper treatment of habitual truants and other delinquent children, in cases where other methods of treatment are not advisable or have proven ineffective.

It is suggested, tentatively, that the following provisions are essential to the proper organization of this division:

- (1) A day detention school for each of the twenty-three attendance districts, in which the program of studies and the methods of instruction and discipline shall be specifically adapted to the needs of children commonly regarded as difficult or unmanageable in regular classes.

Public School 120, Manhattan, was established to meet this need in one section of the city, including districts 2 and 3. The district superintendent in charge of these districts has repeatedly commended the experiment in the highest terms, and the city superintendent in his published report of 1910 recommended that "as rapidly as possible other schools of a similar nature be established."

No attempt has been made in the present study to collect data as a basis for independent judgment concerning the soundness of the methods employed in School Number 120. In view of the judgment expressed by the city superintendent and the district superintendent having general supervision of this school, however, the data necessary to support this judgment should be submitted to the Board of Education and provision made for extending to every school district such facilities as may be proved by the history of this school to meet the special requirements of children who constantly tend to enter the ranks of habitual truants and pupils unmanageable in regular classes.

- (2) A parental school for the custodial care of habitual truants and delinquent children who cannot satisfactorily be dealt with in the day detention schools.

The limits of time and opportunity have not permitted the present report to include a systematic study of the methods employed and the results accomplished by the parental school. Incidentally, however, data collected from the institution by another of the coöperating specialists<sup>1</sup> tend to confirm the opinion of the city superintendent and the associate superintendent so far as concerns the efficiency of work in one specific field.

The parental school is not now equipped to handle more than a small fraction of the problem for which it is maintained. The Manhattan truant school and the Brooklyn truant school are admittedly makeshifts which are to be discontinued when the parental school is in position to perform the entire service. A complete and searching inquiry into the methods and results of all the institutions to which children are now committed for custodial care is essential to the development of detail plans which will command the entire confidence of the community and insure the financial support necessary to carry the plans into effect.

## IX. Suggestions Concerning Reporting Forms and Classification of Data

As an example of the disadvantages under which officials are placed by reason of inadequate or undigested information, the failure of the Board of Education to secure an appropriation of twenty additional attendance officers, in the Budget for 1912, may be cited. In spite of the urgent recommendations of the city superintendent of schools and representatives of the Board of Education and the evident willingness of the Board of Estimate and Apportionment to consider the request on its merits, the appropriation was not granted. The request was denied on the ground (1) that competent evidence was not available to show either that additional attendance officers were needed or, if needed, how many were required to meet the entire need; (2) that a reorganization as proposed by the associate superintendent in his report for 1908, and recommended by him in each succeeding report, would make it possible to accomplish with the existing force much if not all the work for which twenty additional attendance officers were requested; and (3) that, in the interest of economy and efficiency, the service should be reorganized before additions to the staff were made.

It is significant that the plan submitted by the committee on special schools, as finally adopted by the Board of Education, for a reorganization of the compulsory attendance service, places chief emphasis upon a revision of methods and procedure rather than upon changes in personnel or laws. Four of the five recommendations provide for (1) uniform records and procedure, (2) daily reports from all attendance officers, (3) special and daily supervision of attendance officers, and (4) a revision of the printed rules to accord with these changes. The other rec-

<sup>1</sup> See Dean Schneider's Report on Vocational Schools.

ommendation concerns the distribution of duties; providing for the assignment of two attendance officers to work at large.

The proposed plan of reorganization thus clearly recognizes the principle that accurate, prompt, and complete information is a prerequisite of efficient administration; and that such information can be made available to supervising officers by a properly devised and controlled system of field records and summary reports, and in no other way. It may be assumed, of course, that records and reports, however complete and accurate in themselves, are only a means to an administrative end; that unless they properly describe and summarize facts that have vital meaning for administrative officers they may defeat rather than promote the purposes of efficient management; and that, unless actually employed for important administrative purposes, they serve no useful purpose.

With a view to facilitating the proposed revision of records and reports, the following forms and scheme of classification are submitted. These are not assumed to provide for all of the necessary data. They are presented rather as illustrations of a method of recording, analyzing, and summarizing such facts as may be shown by further study of the compulsory attendance service to be essential to the purposes of effective supervision and control:

#### **1. Daily Time and Service Report of Attendance Officers**

Inasmuch as attendance officers, in the actual performance of their work, are usually not subject to direct observation of their supervisors, it is important that accurate and detailed records be prepared from which supervisors can determine not only the whole amount of time which attendance officers give to the service each day but the distribution of time among the various classes of service and the specific items within each class.

Form 1 is suggested as a convenient daily record and summary of the necessary facts regarding the time and service of each officer. Provision is made for a separate entry for each item of service as well as for the totals representing each day's work. Only a few minutes of an attendance officer's time each day will be needed to make the entries required. These entries should be made at the time each item of service is rendered so that there need be no transcription. With such a daily service record, supplemented by the record of individual investigations provided for in Form 3, supervising officers may follow in any desired detail the work of each attendance officer.



FORM 1

Attendance Bureau—Board of Education, New York City

ATTENDANCE  
DISTRICT

Division of Enumeration and Investigation; Daily Time and Service Report

For.....191

No.....

(FORWARD TO DISTRICT OFFICE AT CLOSE OF DAY)

Rec'd.....191

Item	HOUR EXACT TIME		TIME DISTRIBUTION NUMBER OF MINUTES ENGAGED						PARTICULARS OF WORK INDICATE THE KIND OF SERVICE RENDERED				
	FROM	TO	School	Home	Empl'r	Street	Court	Office	Travel	TOTAL	NAME School, Home, Employer, etc.	ADDRESS	REMARKS
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
31													
32													
33													
34													
35													
36													
37													
38													
39													
40													
41													
42													
43													
44													
	TOTALS No. of Items												
	I hereby certify that this report is correct.												
													Signature of Attendance Officer.



## **2. Monthly Summary of Time and Service Reports**

At the close of each day, the attendance officer should enter his daily totals from Form 1 under the appropriate date on Form 2. These entries constitute a cumulative record of time and service, showing for any desired period the total hours or days of service; the distribution of time among the several kinds of service; and the number of items of work distributed into six general classes. Such a cumulative summary provides a ready means for comparing the service record of an officer for a given period with that of any other similar period or to compare service records of different officers for the same period. A monthly summary statement showing the record of each attendance officer would make it possible for any officer to make instructive comparisons of his own record with that of every other officer in the service and would raise questions of relative efficiency which should be of constant suggestive value to supervisory officers. Other uses to which such a summary statement may be put will readily suggest themselves to officials or citizens who desire to study the administrative problems of the compulsory attendance service.

## **3. Report on Investigation of Pupils' Absence**

The form suggested is one which permits the recording, in compact form with a minimum amount of clerical labor, of the facts that would ordinarily be required in a preliminary investigation of causes of absence by officers of the proposed division of enumeration and investigation.

Entries are to be made by school principals under headings indicated by asterisks, and by attendance officers under headings not so marked. By the use of the code of symbols shown on the reverse side of the slip, all the information called for may be legibly recorded on the proposed form three by five inches in size. The form provides for the classification of the entries in such a way as to facilitate the preparation of the daily summary of cases investigated for which Form 5 is designed.

The principal is expected to give the date of each absence, with a statement as to whether the absence was excused or unexcused and the cause of absence where this is definitely known. The entry under "report number" indicates to the attendance officer the number of times a child has previously been reported.

After making his investigation and entering the date of the pupil's probable return, the attendance officer is expected to enter a summary of the record from this slip upon the cumulative record card (Form 4) which is retained in the office of the attendance bureau; the absence slip (Form 3) being forwarded by the district supervisor to the school principal for his information. The principal then transcribes the data reported by the attendance officer to the cumulative record card in his own files.



If a child returns to school on or before the "date of probable return," the principal enters the date of return on the absence slip and returns it to the district supervisor of the attendance bureau, who enters the date on the cumulative record card in his files. The case is then closed so far as the division of enumeration and investigation is concerned.

If the pupil fails to return on or before the "date of probable return," this slip, together with another of the same form giving supplementary information on the case, is sent to the district supervisor. This reopens the case for further inquiry.

#### **4. Cumulative Record of Cases Investigated**

Form 4 is designed as a cumulative record of investigations pertaining to each individual referred to the division of enumeration and investigation. The summary of each investigation is to be transcribed in the office of the principal and in the office of the district supervisor of the attendance bureau; a file being maintained in each office.

By arranging these cards in the files as proposed under the "directions" on the reverse of the form, both the school principals and the district supervisors may provide themselves with the basis for accurate control over cases under investigation and over cases reported upon by attendance officers but not yet returned to school. Record cards of cases under investigation may be arranged according to dates of the original absence slips (date of principal's report) and the attention of the supervisor thus automatically called to any case which is not investigated within any designated time.

The cumulative record card provides the basis for a clear distinction between new and old cases, and between number of investigations (or "cases") and the number of individual children investigated; as well as for an accurate summary of causes of absence and action taken by the attendance bureau.

#### **5. Daily Summary Record for Each School**

Form 5 provides for a daily summary of the main facts regarding the cases received from each school, with the results of investigation by the division of enumeration and investigation and the action taken by the attendance bureau. Such a record for each school separately is an important means of showing the extent and character of coöperation between individual school principals and attendance officers. Only by such a summary can the part taken by school principals in the control of irregular attendance and truancy be clearly shown, and the basis provided for effective supervision of the attendance program as a whole.

The entries in this report should be made daily from the absence report slips (Form 3); the number of "pending cases" each day being those upon which the attendance bureau has not yet rendered reports

# THE COMPULSORY ATTENDANCE SERVICE

725

Form 3.

## REPORT ON INVESTIGATION OF PUPIL'S ABSENCE

LAST NAME		FIRST NAME		DATE OF BIRTH			PARENTS OR GUARDIAN	
				MONTH	DAY	YEAR		
* RESIDENCE				* ROOM NO.		* TEACHER		
RESIDENCE				* DIST. NO.		* SCHOOL NO.		* PRINCIPAL.

\*Sessions Absent Since Last Report—School Year Ending June 30, 191

(Initials)

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
*Month																															
Result of Investigation																															
*Month																															
Result of Investigation																															

REP. NO. *	Sessions Absent								DATE OF	* RE- PORT	IN- VES- TIGATION	PHYS. CERT.	PROB- ABLE RE- TURN	* RE- TURN	Action Taken		
	School Summary			Bureau Summary											REF. TO DIV. OF PREV.	PRE- LIM- INARY NO- TICE	OFFICER NO.
	■ EX- CURSED	■ UNEX- CURSED	* TOTAL	A. DROP NAME	B. LAWFUL		C. UNLAWFUL										
					NO.	CAUSE	NO.	CAUSE									

Spec. Information or Comment

Bureau {

School {

Before Investigation

After Investigation

### DIRECTIONS TO PRINCIPAL

- Mail the absence report slips to the District Office at the close of each day.
- Use a new slip each time a case is reported. Use an additional slip or slips if the report of absence necessitates entries for more than two months.
- Record only the items indicated by \*
- When the slip is returned to the school transcribe the required data to the "cumulative record card,"—Form 4.
- Record date of return of child and remail the absence slip to the District Office.
- If the pupil fails to return to the school on the "Date of probable return," remail the slip to the Bureau together with a new report upon the case.

### I. ABSENCE.

A. M.  
P. M.

### SYMBOLS.

Unexcused

Excused



### II. CAUSE OF ABSENCE.

#### A Drop Name.

- A-1 Enr'd elsewhere
- A-2 Incapacitated
- A-3 Not located
- A-4 Legally emp'y'd
- A-5 Left city
- A-6 Dead

#### B Lawful.

- B-1 Illness of child
- B-2 Illness in family
- B-3 Death in family
- B-4 Poverty
- B-5 Quarantine
- B-6 Court
- B-7 Inclement weather
- B-8 Other urgent reasons

#### C Unlawful

- C-1 Truant child
- C-2 Indifferent parent
- C-3 Illegally emp'y'd
- C-4 Other unlawful reasons



to the schools from which the cases were received. A controlling balance is thus established by which attendance officers may be held accountable for prompt investigation and report. The prospect of subsequent verification of data by officers of the division of prevention will serve as a further check upon the accuracy and completeness of reports rendered by officers making the preliminary investigation.

This report is designed to be made in duplicate, one copy being retained in the office of the district supervisor, the other being forwarded to the office of the chief of the attendance bureau.

#### **6. Monthly Summary by Districts (or by Individual Attendance Officers)**

This report calls for the monthly totals of each school in each district and may readily be adapted to summarizing the monthly record of each attendance officer, by arranging in separate groups the totals for all schools assigned to each attendance officer.

It is designed to be prepared in duplicate in the district supervisor's office, one copy being forwarded to the office of the chief of the attendance bureau. The monthly totals for each school are taken directly from Form 5.

The report provides the basis for ready comparison between individual schools, individual attendance officers, and individual districts; furnishes the data for an annual statement of the main facts regarding the preliminary investigation of causes of absence; and thus aids in locating specific administrative problems upon the solution of which the control of school attendance depends.

As already stated, the foregoing illustrative forms are submitted to facilitate the formulation of a comprehensive and coherent system of records and reports. The illustrative forms are designed for use in preliminary investigation, by the proposed division of enumeration and investigation. Record and reporting forms specially devised to meet the requirements of the many other functions of an attendance bureau would of course be needed.

The main features of the suggested forms which may be of service in the preparation of a complete system of records and reports are the following:

- a. Compactness of forms for field records; the absence slips (Form 3) being carried by each attendance officer in a small flexible binder.
- b. Provision for the use of symbols to reduce clerical work to a minimum.
- c. Adaptation of the form used for original notification (Form 3) to serve the purposes of subsequent notification and reference; avoiding unnecessary duplication of clerical work.



- d. Standardization of size and arrangement of forms to facilitate filing and to make it possible to utilize readily the forms themselves for purposes of current control.
- e. Provision for brief cumulative records for individual cases that are likely to call for current attention (Form 4).
- f. Ready means for summarizing field records, and for laying the basis for periodical cumulative reports; the data in current records being classified under the same headings and in the same order as the data required in summarized reports.
- g. Columnar arrangement of figures to facilitate addition and checking of figures.
- h. Subdivision and arrangement of items in such a way as to produce balancing totals and to show pending cases or service for which employees are to be held currently accountable.
- i. Summarizing of data in such form as to facilitate comparisons and to raise questions of administrative policy.
- j. Provision for current records of time and service, so itemized as to show the distribution of the time and service of each employee under uniform and significant headings.
- k. Summarizing of time and service records in such a way as to facilitate comparisons and administrative control.

### **X. Suggestions for Further Study**

On account of limitations of time and opportunity, this report has covered only one specific group of the administrative problems with which the compulsory attendance service is concerned. The criticism and suggestions have been directed, in the main, toward the first steps which the Board of Education itself proposes to take toward a reorganization of the service; that is, toward a revision of the system of records and reports and more effective methods of supervision. Adequate records and efficient supervision are important first steps because they will not only insure immediate improvement in the service, but will make possible the intelligent and continuous study, by the compulsory attendance service itself, of its own administrative problems. Through such continuous self-analysis, and in no other way, may healthy and permanent growth in the service be assured.

The following suggestions, in outline form, are submitted as illustrations of subjects for further study in several divisions of the general field that have not been specifically treated in the present report:



[illegible]



### Outline of Suggested Subjects for Further Study

1. **As to the supervision of children paroled and placed on probation.**
  - a. Do attendance officers obtain adequate information concerning the progress of children under supervision?
  - b. Is systematic provision made for the conference and counsel needed by children under supervision?
  - c. Is systematic provision made for transferring pupils in cases where the attitude of teacher or principal is prejudicial to the interest of pupils?
  - d. Has the practice of attendance officers been made reasonably uniform and consistent with respect to the supervision of children on parole and probation; considering specially—
    - 1.) The number of children supervised by each officer.
    - 2.) The length of time children are kept under supervision.
    - 3.) The character of supervision given—frequency of interview, kind of evidence of progress required, etc.
    - 4.) The conditions upon which children are recommended for discharge from probation or parole.
    - 5.) The steps taken to secure coöperation of principals, teachers, medical inspectors and social agencies.
2. **As to the placing in school of non-attendants found on the street.**
  - a. Is adequate inquiry made as to physical condition, home conditions, and other influences determining non-attendance?
  - b. Are the facts so ascertained made available to principals and teachers?
  - c. Is the coöperation of the appropriate civic and philanthropic agencies sought and obtained?
  - d. Has the practice of attendance officers, in the discovery and treatment of cases of non-attendance, been standardized?
3. **As to the hearing of cases by district superintendents.**
  - a. Do superintendents take the initiative in calling hearings or is such initiative left to attendance officers?
  - b. Do superintendents require full reports from attendance officers and direct testimony of parents, teachers, and delinquent children themselves as a basis for judgment in dealing with cases?
  - c. Is the practice of superintendents prompt, uniform, and effective concerning the disposition of cases? (with special reference to):
    - 1.) Cases discharged for lack of evidence.
    - 2.) Cases discharged with reprimand.

- 3.) Cases placed on probation.
- 4.) Cases committed to truant schools.
- 5.) Cases recommended for prosecution.

**4. As to the prosecution of parents and of truant and incorrigible children.**

- a. Is the initiative in bringing cases before courts properly located and exercised?
- b. Are cases so prepared and conducted as to insure adequate consideration by the courts?
- c. Is there a reasonable degree of uniformity in the percentage of cases successfully prosecuted?
- d. Is advantage taken of opportunity for bringing cases in courts especially qualified to hear children's cases; or of designating special days for the hearing of truancy cases?

**5. As to the enforcement of the child labor, mercantile, and newsboy laws.**

- a. Is the distribution of authority and responsibility made as contemplated in the laws between—
  - 1.) The compulsory attendance service?
  - 2.) The New York health department?
  - 3.) The city police department?
  - 4.) The state department of labor?
- b. Is an effective plan in force to secure the coöperation of—
  - 1.) The several official agencies, city and state, charged with the enforcement of the law?
  - 2.) The child labor committee and other private agencies?
- c. Are the penalties imposed by the courts, through the efforts of attendance officers, such as to create respect for the laws?

**6. As to the administration of truant schools and parental schools.**

- a. Is the physical equipment well adapted to the special requirement of—
  - 1.) Housing of residents?
  - 2.) Ordinary schoolroom instruction?
  - 3.) Industrial and agricultural training?
  - 4.) Physical training?
- b. Does the program of studies meet the special requirements of truants, and does it otherwise conform to the best educational practice?
- c. Are the methods of instruction, government, and discipline such as to develop self-control, respect for law, and capacity for co-operation?

- d. Is there adequate provision for medical inspection and the treatment of physical defects?
- e. Is there adequate provision for sanitary inspection and supervision?
- f. Does the daily régime of sleep, diet, work, and recreation conform to established standards of hygiene?
- g. Do the records maintained furnish accurate and sufficient information as a basis for administration?
- h. Is the available information intelligently used for purposes of supervision and control?

**7. As to general administration and legislative control.**

- a. Is a clear distinction made between the functions of the Board of Education and its Committee on Special Schools (legislation, criticism, advice) and the functions of the Superintendent of Schools and the Board of Superintendents (administration)?
- b. Is information currently and promptly available concerning—
  - 1.) The results accomplished by each member of the staff?
  - 2.) The results accomplished in each branch of the service?
  - 3.) The relation of truancy, irregular attendance, and incorrigibility to—
    - a.) Physical condition of pupils?
    - b.) Home conditions of pupils?
    - c.) Retardation of pupils?
    - d.) Age and sex of pupils?
    - e.) Program of studies?
    - f.) Efficiency of teaching and supervision?
    - g.) Part-time attendance?
    - h.) Attendance officer's efficiency?
    - i.) Probation and parole?
    - j.) Prosecution and commitment?
    - k.) Fines imposed upon parents?
  - 4.) The cost of each activity per unit of work done and results accomplished?
- c. Are the available facts currently utilized for purposes of legislation, criticism, advice, and administrative control?

## APPENDIX I

**Recommendations of Superintendent Maxwell and of Associate Superintendent Shallow regarding the compulsory attendance service, as found in the published annual reports of the City Superintendent of Schools for the years 1907-1911.**

**Associate Superintendent Shallow—1907**

I recommend that the city charter be so amended as to bring [the attendance officers] under the provision of a retirement law.

I have requested . . . the appointment of at least twenty additional attendance officers for the year 1908 [77 employed 1906-1907].

There is urgent need for a complete and thorough revision of the compulsory education law; with provisions (1) to compel children to attend school between the ages of seven and sixteen years; (2) to compel certain children, unless excused under regulations, to attend school from the beginning of the term in September to the close of the term in June; (3) to compel parents to provide for the proper medical and physical needs of their children so that they shall be in fit physical condition to attend school; (4) to fix responsibility for the enforcement of this law by bringing all cases of violation of the compulsory education law, either by children or parents, before children's courts only; (5) to impose a fine upon persons who employ children unlawfully, and not "a penalty" as provided in the present law; (6) to impose a fine on parents for first and second violations of the compulsory education law, and to commit such persons to jail until the fine is paid; (7) to make attendance upon evening school optional.

We need in the law a better definition of truancy or illegal absence from school.

A permanent school census bureau should be established.

**Superintendent Maxwell—1907**

I heartily indorse the . . . recommendations made by Mr. Shallow as to amendments that ought to be made to the Compulsory Education Law.

The remaining buildings [for the parental school], as they are urgently needed, should be undertaken as soon as possible. A home for the principal should be erected at once.

**Associate Superintendent Shallow—1908**

After years of observation of the work of attendance officers under the present regulations, I am convinced that our method of doing work is grossly defective. It is not businesslike.



Most of the officers now report only once each week to their district superintendent; some report twice a week, and practically the rest of the time their work is done as it best suits the individual officer.

Notwithstanding the fact that these employees are under the general regulations of the by-laws and under the general control of the city superintendent of schools, and are required to forward weekly, monthly, and annual reports to this office, yet systematic and efficient work is lacking. The results are not commensurate with the amount expended for attendance officers' salaries and disbursements. I recommend that the work of the attendance officers be reorganized as follows:

First. Officers should be detached from the offices of the district superintendents, thereby relieving the district superintendents from much work in connection with the enforcement of the compulsory education law. The conducting of hearings in cases of truancy and incorrigibility should remain with the district superintendents. This would permit the superintendents to give more time to supervisory duties.

Second. The territory within the City of New York should be divided into a suitable number of large precincts and a force of attendance officers placed in each precinct under one of their own number, as a commander. All officers should report to this commander at the beginning and at the close of each day's work, and receive from him all cases for investigation.

Third. Principals of schools should report all cases of absence and truancy to the commander of the precinct, and he should be held strictly accountable for the attendance of all children within his precinct. The commander should be displaced and returned to the ranks whenever conditions in the district are not satisfactory.

#### **Superintendent Maxwell—1908**

[Nothing in Superintendent Maxwell's recommendations concerning compulsory education.]

#### **Associate Superintendent Shallow—1908**

Truant schools and parental schools are necessary for certain children. . . . But the institution is a poor place at best and no child should be committed if he can be saved in any other way.

The maintenance of truant in this school [the Manhattan Truant School] after three more cottages are built at the Parental School would not seem justifiable and I recommend that the institution be discontinued as a place for the maintenance of truant and reorganized as a day school for truant and other delinquents.

With an adequate force of officers and an organization formed on the lines which I indicated in your Tenth Annual Report, truancy and non-attendance in the City of New York may be reduced to a minimum. [The Board of Estimate was requested to furnish \$18,000 for twenty ad-

ditional attendance officers. Eighty-four attendance officers were employed during 1908-1909]. I recommend that the Board of Education favor the placing of attendance officers under the provisions of a pension law.

There is urgent need for three, if not more, cottage homes for the boys at the Parental Home at once.

#### **Summary of Recommendations—1908**

1. That an adequate force of attendance officers be employed.
2. That these officers be properly organized.
3. That the Manhattan Truant School be reorganized as a day school for delinquent pupils.
4. That additional day schools for delinquents be established wherever possible.
5. That necessary repairs be made at the Brooklyn Truant School, and that the site be used for high school and playground purposes when no longer needed for a truant school.
6. That a dentist and an oculist be employed to visit the truant schools.
7. That provision be made for retiring old and disabled attendance officers on pension.

#### **Superintendent Maxwell—1909**

The chief difficulty in enforcing the compulsory education law continues to be the reluctance of magistrates to impose on parents and employers who are at fault the penalties prescribed by the statutes.

[The Brooklyn Truant School], as it is housed in an unsuitable building, should be dispensed with as soon as possible.

There is no longer any reason why the Manhattan Truant School should be maintained as an institution for boarding and lodging truants. It should, in my judgment, be reorganized as a day truant school after the model of Public School No. 120, Broome street, Manhattan, which has been so successful in the reformation of truants.

#### **Associate Superintendent Shallow—1910**

I regard the failure to punish parents [by city magistrates] as the greatest obstacle to the proper enforcement of this law. [17 per cent. found guilty.]

I am convinced that the law relating to the proof of the date of birth of applicants for employment certificates should be amended.

The urgent need for additional cottages at the Parental School is apparent to all. We need also a small building for an emergency hospital.

In my report of two years ago I recommended that a force of attend-

ance officers be organized in a more efficient way. I respectfully renew this recommendation. In my opinion the work could be more efficiently done through such an organization.

#### **Superintendent Maxwell—1910**

I recommend that the necessary buildings to house and teach all of the so-called incorrigible truants in the city be erected on the grounds of the Parental Home at the earliest possible date.

I recommend that as rapidly as possible other schools of a nature similar to Public School No. 120 be established.

It is hoped that an arrangement may be made with the police department by which, when an officer finds a child who is a truant or non-attendant, the police officer himself may at once place the child in school.

I think it would not be too much to ask high-school teachers to visit the homes of all such children [who register in the high schools in June and who do not return to school in September] and find out the facts before their names are reported for truancy.

#### **Associate Superintendent Shallow—1911**

The [newsboy] law should be amended so that parents who allow their children to violate it, after warning, may be fined.

I am convinced that the law relating to the proof of the date of birth of applicants for employment certificates should be amended. [Quoted from 1910 report.]

#### **Summary of Recommendations—1911**

1. That part of the labor law which provides for the regulation of the selling of newspapers and magazines by boys between ten and fourteen years of age should be amended so as to make parents responsible for permitting their children to sell papers illegally. The penalty for these violations now falls on the child alone.

2. We should have an officer assigned to the work of investigating home conditions before boys are paroled from truant schools; and visiting boys who have been paroled or discharged; and, where possible, finding places of employment for such boys.

3. The methods of making and keeping reports of compulsory education work by district superintendent and attendance officers should be revised and made uniform.

#### **Superintendent Maxwell—1911**

I recommend a revolutionary change in the organization of the Compulsory Education Department . . . that it should be removed from the special direction of the city superintendent, that it should be placed under the general direction of the Permanent Census Board, and that it

should be administered (subject to the general direction of this board) by the secretary of the Permanent Census Board. My reasons for this recommendation are the following:

1. Our district superintendents are overburdened with official duties. Too much of their time is given to the enforcement of the compulsory education law and the supervision of the attendance officers.

2. There is now duplication of work and waste of time as between the attendance officers and the police officers assigned to the Permanent Census Board . . . [and] valuable time is lost between the date of the report [by police officers] and the date of the reinvestigation [by attendance officers].

3. It will be more feasible to obtain a much needed increase in the force of attendance officers, when these officers are charged with the duties both of taking and amending the census and of enforcing the law.

4. The change will bring the great strength of the Police Department to reinforce the administration of the compulsory education law.

The facts and statistics presented in this [Superintendent Shallow's] report show conclusively the advisability (a) of largely increasing the accommodations of the parental school, and (b) of increasing the number of attendance officers.

## APPENDIX II

### Abstract of the Chief Requirements of the Compulsory Education Law

The compulsory education law of the State of New York requires:

1. That every child between eight and sixteen years of age, in proper physical and mental condition to attend school, shall regularly attend a school in which at least six common school branches are taught, or shall receive equivalent instruction elsewhere; provided

2. A child between fourteen and sixteen years of age to whom an employment certificate has been duly issued and who is regularly and lawfully engaged in useful employment is exempted from attendance upon day school.

3. That a boy between fourteen and sixteen years of age who is regularly and legally at work, but who has not completed the course of study prescribed for the elementary schools, shall attend a public evening school, or school giving equivalent instruction, for a prescribed period each year.

4. That persons in parental relation to a child required by law to attend school shall cause the child to attend; failure to comply with this requirement being punishable by fine or imprisonment.

5. That no person, firm, or corporation shall employ a child who

is not legally entitled to be so employed; and that a person, firm, or corporation employing a child between fourteen and sixteen years of age, and who is required under the law to attend an evening school, shall display in the place of employment a certificate, which school authorities are required to furnish, showing that the child is attending an evening school as prescribed by law; a penalty of fifty dollars for each violation of these provisions being imposed by the law.

6. That teachers shall maintain accurate records of attendance, showing each day's attendance and the number of hours in each day thereof; and that such records shall be open to the inspection of attendance officers or other persons authorized by the school authorities.

7. That the school authorities shall appoint one or more attendance officers to enforce the provisions of the law; and that the Superintendent of Schools shall supervise the enforcement of the law.

8. That attendance officers may arrest without warrant and deliver to parents or teachers any child found to be unlawfully absent from school.

9. That the school authorities may establish schools or separate rooms in public school buildings for habitual truants, or pupils who are insubordinate, disorderly, or irregular in attendance; and may provide for the confinement, maintenance, and instruction of pupils in such schools; and may, with the written consent of persons in parental relation, order a child to attend such a school or to be confined therein for a period not exceeding two years, or until the child is sixteen years of age; or may order such a child, under similar conditions, to be confined in a private school or institution upon such terms of compensation as may be agreed upon.

10. That, if the persons in parental relation to such a child shall not consent to the confinement of the child in a school or institution, the child may be proceeded against as a disorderly person and may be sentenced by the court to be confined in a school or institution for a period not exceeding two years.

11. That the confinement of pupils in schools for truants, insubordinate, and disorderly pupils shall be conducted with a view to the improvement and to the restoration, as soon as practicable, of such a pupil to the institution elsewhere which he may be lawfully required to attend; that industrial training shall be furnished in every such truant school; and that the school authorities shall have authority to parole at any time any truant committed by them.

Closely related to these provisions are the requirements of the laws regulating the employment of children in street trades and defining the conditions under which children may be employed in factories and mercantile establishments, as follows:

12. That police officers and the regular attendance officers appointed by the Board of Education shall enforce the provisions of the

article defining the conditions upon which children may sell newspapers on the streets or in public places.

13. That no child shall be employed in factories or mercantile establishments unless an employment certificate shall have been issued by the commissioner of health and filed in the office of the employer.

### **APPENDIX III**

#### **Distribution of Functions Among the Official Agencies Charged With the Enforcement of the Compulsory Education Law**

##### **1. Permanent Census Board**

Ascertains by actual enumeration the children subject to the provisions of the compulsory education law; collects and makes currently available information concerning all children between the ages of seven and sixteen years of age.

##### **2. City Department of Health**

Issues employment certificates to children between fourteen and sixteen years of age, who have met the prescribed conditions as to school attendance and educational advancement.

##### **3. Compulsory Attendance Service**

Established and maintained by the Board of Education, its responsibilities being:

- a. To ascertain the facts regarding the enrollment, attendance, and mental and physical conditions of children included in the census enumeration.
- b. To undertake, by appropriate constructive measures, to prevent truancy and irregularity of attendance among pupils enrolled in schools and subject to the provisions of the law.
- c. To apprehend and by proper disciplinary means compel the attendance of pupils found to be unlawfully absent from school.
- d. To institute and conduct prosecution proceedings against children, parents and employers who violate the provisions of the compulsory law.

##### **4. Truant and Parental Schools**

Established and maintained by the Board of Education for the segregation and special treatment of habitual truants and insubordinate or disorderly pupils.

**5. State Department of Labor**

Responsible for the enforcement of the provisions of the State laws concerning the employment of children in factories and mercantile establishments.

**6. City Department of Police**

Jointly responsible, with the compulsory attendance service of the Board of Education, for the enforcement of the laws regulating the employment of children in street trades.

**7. Children's Courts and Magistrates' Courts**

Responsible for the hearing and disposition of cases of children, parents, and employers brought before the courts on charges of violating the compulsory education law or the laws regulating the employment of children.

**8. Supplementary Agencies**

In addition to these official agencies, there are numerous public and private organizations, equipped and ready to render service, which might supplement and reinforce in many ways the work of the seven official agencies named.





**VOCATIONAL (INDUSTRIAL) SCHOOLS**



**CORRESPONDENCE BETWEEN THE COMMITTEE ON SCHOOL INQUIRY, AND PROF. PAUL H. HANUS AND DR. HERMAN SCHNEIDER, RELATING TO DR. SCHNEIDER'S REPORT.**

**Letter of the Chairman of the Committee on School Inquiry to Dr. Herman Schneider, proffering questions.**

AUGUST 13, 1912.

DR. HERMAN SCHNEIDER,  
*University of Cincinnati,  
Cincinnati, Ohio.*

DEAR SIR:—The Committee on School Inquiry, after reading the galley proof of your report rendered to it, feels that the report might be strengthened in certain particulars as to which it desires to offer you the following suggestions with the request that you supplement the report as indicated. If you are able to amend and supplement the report as desired, the Committee requests that you be good enough to forward to it typewritten amendments to the galley proof now in hand, which the Committee will then transmit to the printer for new galley.

Will you kindly give the following information about the vocation schools and courses which were investigated by you in the City of New York:

1. Which schools did you visit, how much time did you spend in each, and what was your method of investigation.
2. Please give the average daily attendance by age, by grade, and by sex for each school reported upon by you.
3. Can you furnish the number of courses in each school, whether cultural, theoretical or practical, with the time given to each, showing the number of subjects and the number of pupils pursuing each subject, segregated by age, sex, and grade, and showing the average time pupils attend each school and pursue each course.
4. Please give for each school and course investigated the number of teachers, classified according to sex, efficiency, previous professional training, and experience in vocational work.
5. Please describe the follow-up method employed to keep account of pupils after leaving school.
6. Please describe the help and advice offered by vocational school authorities in obtaining employment for their pupils.

7. What is the present attitude of New York employers and labor unions toward vocational schools?

Please be good enough to let me know by return mail how soon I may expect from you the material requested.

Respectfully,

JOHN PURROY MITCHEL,

*Chairman, Committee on School Inquiry.*

**Letter of the Chairman of the Committee on School Inquiry to Professor Paul H. Hanus, enclosing copies of letters proffering questions sent to the various specialists.**

AUGUST 14, 1912.

PROF. PAUL H. HANUS,  
*Harvard University,  
Cambridge, Mass.*

MY DEAR PROFESSOR HANUS:—Enclosed you will find copies of letters mailed to-day to some of the experts engaged in the school inquiry. The letters speak for themselves and reflect the views of the Committee after examination of the various reports of these specialists.

There is an apparent reluctance on the part of Prof. Moore to answer the questions which I have asked him. These questions, however, together with others, will have to be answered before his report will be accepted by the Committee on School Inquiry. I am now engaged in reading his report.

Respectfully,

JOHN PURROY MITCHEL,  
*Chairman, Committee of School Inquiry.*

**Excerpt from Letter of Prof. Paul H. Hanus withholding comment on the action of the Chairman of the Committee on School Inquiry in dispatching letters proffering questions directly to the various specialists.**

AUGUST 15, 1912.

MY DEAR PRESIDENT MITCHEL:—I have just received your letter dated August 14, 1912, enclosing copies of letters which you have sent to certain of my associates on the Educational Aspects of the School Inquiry—namely, Professors Elliott, Schneider, Davis, McMurry, and Messrs. Thompson and Curtis, asking certain questions about their reports. I make no comment at present on these letters, nor on the fact that you wrote to my associates instead of to me. \* \* \*

Very truly yours,

PAUL H. HANUS.

**Excerpt from Letter of the Chairman of the Committee on School Inquiry to  
Prof. Paul H. Hanus.**

AUGUST 19, 1912.

PROF. PAUL H. HANUS,  
*Harvard University,  
Cambridge, Mass.*

MY DEAR PROF. HANUS:—I have your letter of August 15th. In writing the letters to your associates, the various specialists employed in the inquiry, and at the same time sending you copies of the letters written to them, I felt that I was at once saving time and adopting the most direct method of dealing with the work in hand. From your letter I gather the impression that you may feel that in this the Committee intended to slight you. Rest assured there was no such intention. You will, of course, appreciate that there is a direct responsibility on the part of each one of these specialists to the Committee, as there is on the part of the Committee of the Board of Estimate and to the public for their work. \* \* \*

Respectfully,

JOHN PURROY MITCHEL,  
*Chairman, Committee on School Inquiry.*

**Letter of Dr. Herman Schneider sent to Professor Paul H. Hanus, answering a telegram from Professor Hanus, requesting him not to answer the questions proffered in the letter of the Chairman of the Committee on School Inquiry.**

CINCINNATI, OHIO, AUGUST 19, 1912.

DR. PAUL H. HANUS,

*9 Chauncy St., Cambridge, Massachusetts.*

MY DEAR DR. HANUS:—Your letter with enclosures came this morning. In accordance with the request made in your telegram I have not replied to President Mitchel.

My position in the matter, of course, is perfectly clear and obvious. You, as Chairman of the Committee in charge of the Educational Aspects of the Inquiry, employed me to work under you. My dealings were all with you, both business and educational. My bills for services were paid upon your endorsement. It seems to me that any man working in an organization would at once assume the position I assume; that all of my communications must be through the chief of my department.

I agree with you in what you say in the proposed letter to President Mitchel. Herewith is a letter to you answering the questions contained in President Mitchel's letter to me.

I do not think the matter suggested in his letter would strengthen my report in the least; on the contrary, I am sure the report would be weakened materially by the addition of the matter suggested in President Mitchel's letter to me.

Cordially yours,

HERMAN SCHNEIDER,

*Dean, College of Engineering.*



**Letter of Dr. Herman Schneider to Chairman of the Committee on School  
Inquiry dated August 21, 1912.**

CINCINNATI, OHIO, AUGUST 21, 1912.

PRESIDENT JOHN MITCHEL,

*Board of Aldermen,*

*51 Chambers St., New York, N. Y.*

DEAR SIR:—I am writing and sending to Dr. Hanus for transmission to you a statement covering questions asked in your letter of the 13th inst.

Respectfully,

HERMAN SCHNEIDER,

*Dean, College of Engineering.*

**Letter of Dr. Herman Schneider to Prof. Paul H. Hanus answering questions proffered in the letter of the Chairman of the Committee on School Inquiry which Prof. Hanus requested Dr. Schneider not to answer directly.**

CINCINNATI, OHIO, AUGUST 19, 1912.

DR, PAUL H. HANUS,

*9 Chauncy St., Cambridge, Massachusetts.*

MY DEAR DR. HANUS:—I have a letter from President John Purroy Mitchel, of the Board of Aldermen, a copy of which I understand was mailed to you. In this letter President Mitchel suggests that my report on Industrial Education might be strengthened in certain particulars, as to which he offers certain suggestions. The suggestions offered are in the form of questions. The character of the questions asked seems to indicate that President Mitchel wants material incorporated into the report which you and I felt would weaken it.

You will recall that when I had my first conversation with you in August, 1911 (at which time you employed me), I pointed out to you that two types of reports could be submitted to you on this subject. First, a broadly constructive report, and, second, a critical analysis of the work then being done in New York City in Industrial Education, together with suggestions for improvement of such work. I pointed out to you at that time that the sum total of the work being done in New York City in the Public Schools was so very small when compared to the whole problem to be tackled that it would be much better to adopt the broader policy; I also emphasized the opinion that an extended investigation into a negligible quantity would destroy the value of the broader report by diverting attention from it. I also stated to you at that time that if you wanted an analytical investigation made into the small amount of work being done, the position would offer no attraction to me. At this and subsequent times we agreed entirely that practically all the emphasis should be placed upon a broader investigation, together with a comprehensive constructive policy based upon an analysis of general conditions in New York City, rather than upon the little work at present being carried on. It was further agreed that, on account of the tremendous scope of the problem my work should not include specific courses of study, detail investigation of class room methods now in operation, nor of the compilation of statistics, or matters other than that obtainable from the school sources. In other words, it was specifically agreed that the strongest possible report that could be made on the problem of Industrial Education in New York City should emphasize

to the fullest extent the numerical size and industrial scope of the problem, and the proposed methods of solution by determining through analysis the types of schools necessary to meet the conditions. The more I investigated the problem and worked upon it, the more strongly I was convinced that an emphasis of minor details in the report would detract very materially from the emphasis which we desired to place upon the big problem of New York City, which is not being met at all.

If my judgment is to prevail with regard to the kind of report which will be of the most value to New York City, I shall certainly oppose most strongly the introduction of minor analyses, which, I am sure, will draw attention from the tremendously important and really vital problem of New York City's general policy on Industrial Education.

However, I am glad to give to President Mitchel through you such information as I possess covering the questions asked in his letter. The questions and answers are as follows:

i. Which schools did you visit, how much time did you spend in each, and what was your method of investigation?

a. The Boys' Vocational School, the Girls' Vocational School, the Parental School at Jamaica on Long Island, the Night Elementary School at Lenox Avenue and 138th Street, and Stuyvesant Night School.

b. I did not time myself on these visits, but stayed until I got the information I needed for my report. Some of the information I obtained at the Girls' Vocational School was questioned by several of the experts and I made a second visit to verify it.

c. My method of investigation was one which I have come to use through experience. I first obtained what information I could concerning these schools from printed matter such as the Superintendent's report, and separate reports published by schools themselves; also, I obtained some information from the other men on the inquiry. I then visited the school, introduced myself to the principal and asked him to accompany me and show me all of the work of the school. I went into every classroom and shop, asked the principal, teachers, and pupils numerous questions in order to ascertain broadly the general policy of the school, the method of coördination between various courses, the methods of presentation, the time spent in shops and in different classrooms, together with any other information which might grow out of a cross-examination, and which might be valuable. I was primarily concerned with questions of policy, because this was the vital matter. For example, the critical point in any of these schools was to determine the amount of emphasis placed upon manual dexterity as compared to the amount of emphasis placed upon mental development, and whether the school's policy was a trade school policy or a pre-vocational school policy. I asked in detail how long each pupil was on each machine, how many types of machines the pupils worked at, and how many different

types of occupations the pupils were familiarized with; I sought to have the relationship established between, say, History and Carding, or between Geography and Dressmaking. I got copies of the courses of study, and what statistics the school had to furnish on attendance, although I knew I should not use them in detail in my report. After my investigation was concluded I talked to the Principal to ascertain his views as to exactly what he was attempting to do.

2. Please give the average daily attendance by age, by grade and by sex for each school reported upon by you.

I did not obtain the average daily attendance by age. The grades in the schools visited were not clearly differentiated and the information was unimportant. In the three major schools visited (the Boys' Vocational School, the Girls' Vocational School, and the Parental School) the sexes are not mixed.

3. Can you furnish the number of courses in each school, whether cultural, theoretical or practical, with the time given to each, showing the number of subjects and the number of pupils pursuing each subject, segregated by age, sex, and grade, and showing the average time pupils attend each school and pursue each course?

The classification suggested (cultural, theoretical, or practical) is, of course, obsolete. For example, under what heading would Arithmetic fall, or Commercial Geography or Designing? The schools visited usually classed their subjects as vocational and non-vocational. This, of course, is a hopeless classification also.

4. Please give for each school and course investigated the number of teachers, classified according to sex, efficiency, previous professional training, and experience in vocational work.

My investigation specifically did *not* include any inquiry into the appointment or proficiency of teachers.

5. Please describe the follow-up method employed to keep account of pupils after leaving schools.

In the Boys' Vocational School a follow-up method has just been started. It is in an embryonic state and consists simply in visiting as far as possible the boys' employers to ascertain how they are progressing. The plan described to me by the Superintendent in the Girls' Vocational School was simply to have the pupils report their progress to the school. Of course, many of them failed to do this; therefore their records were of little value. The new Principal stated to me that she hoped to devise a surer follow-up method. It will be recalled that the Principal of the Girls' Vocational School took charge only last September.

Since the boys in the Parental School in nearly all cases return to the Public School, the follow-up method was not vocational, and, hence, was

of no interest to me. In the Night School, of course, no follow-up system was used.

5. Please describe the help and advice offered by vocational school authorities in obtaining employment for their pupils.

Of course this question applies only to the Girls' and Boys' Vocational Schools. In the Boys' Vocational School the matter is a personal one on the part of the Principal and his Assistants, who visit factories to see about the placing of the boys. The small number of trades taught and the small number of boys graduating, of course, did not require an elaborate system. The Principal stated further that consultations were held with pupils' parents looking to the proper placing of the boy. This is, in a measure, vocational guidance, but is very restricted, largely because (see report) the number of *types* of occupations is so limited. The Principal of the Girls' Vocational School stated that an effort was made to place the girls in the better class of mercantile and manufacturing establishments. There was no particular system for doing this, but she was planning a more clear-cut scheme than had been in operation. Generally speaking, the work in both schools is in an embryonic state.

7. What is the present attitude of New York employers and labor unions toward vocational schools?

This question would not be possible of answer except after an investigation covering a long period of time by a large number of investigators, and even then I question whether the results would be worth the effort. I have been doing industrial work in Cincinnati for seven years in close relationship with different types of concerns and could probably answer this question for Cincinnati better than any other person in this city; I should not attempt to do so, however. Cincinnati is small compared to New York, but, according to the census figures has, in what is known as the Cincinnati district, about 2,800 employers.

The attitude of labor unions generally seems to be tending toward systems of education which supplement industrial training in commercial shops or which give vocational guidance. It ought to be obvious that one not connected with the labor unions in some official capacity could not volunteer to be their spokesman as to their policies.

Of course, I desire to make my report as strong as possible, and, therefore, am wide open to suggestions from any source as to how to do this. I am convinced, however, that the material suggested in these questions would weaken rather than strengthen the report as it stands.

Respectfully,

HERMAN SCHNEIDER,  
*Dean, College of Engineering.*

**Excerpt from Letter of Professor Paul H. Hanus to the Chairman of the Committee on School Inquiry expressing objections to the Committee's dealing with the various specialists directly relative to suggested improvements in the various reports.**

AUGUST 25, 1912.

MY DEAR PRESIDENT MITCHEL:—I have your letter dated August 19th, 1912, with its enclosed questions on Moore's report. I note that you say the Committee did not intend "to slight" me by writing directly to my associates about their reports. My chief objection to the course you pursued is that it is an attempted editorial revision of the report which, as specialist in charge, I am making to your Committee. Naturally, I object to any editorial revision of the report except my own, including such coöperation of my associates as I need. My revision does not, of course, exclude from consideration such comments of yours as seem to me important. On the contrary, I told you long ago that I would give your suggestions careful consideration. I therefore feel that comment on any part of the report should be sent to me. Moreover, any other course is almost sure to result in general confusion and needless delays; especially since the comments and questions you sent were based partly or wholly on unrevised first galley proofs.

\* \* \*

*Very truly yours,*

PAUL H. HANUS.

Letter of Professor Paul H. Hanus to the Chairman of the Committee on School Inquiry asking if the Committee wishes a conference.

AUGUST 21, 1912.

PRESIDENT JOHN PURROY MITCHEL,  
*51 Chambers St., New York City.*

MY DEAR PRESIDENT MITCHEL:—If you have not yet heard from my associates on the School Inquiry, to whom you recently wrote sending certain questions on their reports submitted to you through me, you doubtless will soon. In accordance with my suggestion to them, they have referred your questions to me. Do you wish to see me for a conference, and, if so, when and where?

Very truly yours,

PAUL H. HANUS.

**Letter of the Chairman of the Committee on School Inquiry to Professor Paul H. Hanus re-affirming the Committee's right to deal with the various specialists directly.**

SEPTEMBER 5, 1912.

DR. PAUL H. HANUS,  
*Harvard University,*  
*Cambridge, Mass.*

DEAR SIR:—Pursuant to your request, I have called a meeting of the Committee on School Inquiry of the Board of Estimate for 2.30 o'clock in the afternoon of Tuesday next. This is the earliest date which the Comptroller could appoint for the meeting. At that time we hope to have the answers to the questions recently sent to the various specialists taking part in the inquiry, so that we may proceed immediately with the publication of reports.

It seems almost futile to take up with you in advance the several issues raised by your letter. The enclosed copy of a letter addressed to Mr. Curtis upon the relation of the specialists to this Committee contains the substance of what I am writing to each. There are several misapprehensions as to this relationship stated and implied in your letter which we shall want to go over in such further detail next Tuesday as may seem necessary.

We did not retain you to keep the specialists at arm's length from the Committee on School Inquiry, but rather to facilitate our dealing with them. We did not ask you to make a report to this Committee, although we are very glad to receive such a report from you. We retained you to direct and supervise the collection of facts. We have asked the specialists in the letters sent them only for facts for the collection of which we have already paid, and which are indispensable to the support of statements made by them. We did not even ask you to revise the specialists' reports to us. We are glad to have your revision. Only after you had done your revising and had failed to call for facts which we regard as necessary did we write to the specialists asking what we expected they would, in their own interest, as well as in fulfilment of their obligation to the people of New York, be glad to furnish.

Due to my illness and to other conditions for which this Committee is not responsible, we consented to accept from you galley proof in place of manuscript. Had the specialists' reports been submitted to the Committee in manuscript in time for examination, these requests



for supporting facts would have been made before the reports went to the printer.

We have paid nearly \$50,000 for this work. We are in duty bound to get the fullest possible return for this money. You surely could not expect us to accept reports costing \$50,000 without reading them, or to pass over omissions of facts, which facts we assume have been collected by the specialists, without giving to those specialists an opportunity to strengthen their reports and the result of the inquiry as a whole.

If you will consider this matter calmly and without prejudice I think you will come to the conclusion that the Committee, instead of attempting to discredit, weaken, or change your reports and the results of your work, is doing all in its power to strengthen those reports, secure permanence for the results of your work, and obtain for the City full value for its heavy expenditure.

Respectfully,

JOHN PURROY MITCHEL,

*Chairman, Committee on School Inquiry.*

**Excerpts from a Letter of Prof. Paul H. Hanus sent to the various specialists informing them of a conference held between him and the School Inquiry Committee, and informing them how to answer the various questions proffered in the letters sent to them by the Chairman of the Committee on School Inquiry.**

SEPTEMBER 16, 1912.

I know you are waiting to hear as much of the result of my conference with the Committee on School Inquiry in New York City last Tuesday as can be satisfactorily put into a letter. I returned to Cambridge late Thursday night and I have been ill since, otherwise this letter would have reached you sooner.

The following statement, dictated by President Mitchel toward the close of the conference, is the chief tangible result of that conference.

"It is understood between the Committee on School Inquiry and Professor Hanus:

"All reports of specialists in the form of first galley as corrected, with the exception of the report of Professor Moore, are to be sent from the office of the Chairman of the Committee to the printer. Second galley is then to be forwarded by the printer directly to Professor Hanus for revision. Upon revision, second galley as corrected by Professor Hanus and the specialists, is to be forwarded to the office of the Chairman of the Committee for consideration. If the reports are not then satisfactory to the committee, further discussion of them will be taken up by the Chairman of the Committee directly with Dr. Hanus, or through him with the specialists.

"As to Dr. Moore's report, now in first galley corrected, it is understood that this will be held in its present form until after Dr. Moore's return and a conference has been had between Professor Hanus, Dr. Moore, and the Chairman of the Committee, which conference is to be held as soon after Dr. Moore's return as possible.

"Dated, September 10, 1912."

You will see that the next step forward toward the publication of the report has been taken, namely, second galley proof. Further, you will notice that President Mitchel has affirmed my contention that editorial revision of the report, including the reports of my associates, centers in me.

With respect to the questions and comments recently sent you by President Mitchel, I beg to ask that you will consider these questions as follows, sending your replies to me:

Please classify the questions in groups, as follows:

- a. Immaterial; that is, questions or comments which have no real bearing on the significance or other value of your report.
- b. Confusing; that is, questions or comments which raise issues of remote significance or no significance so far as value of the report is concerned, and which might, if answered, lead to needless discussion.
- c. Already answered or covered in the reports.
- d. Require further investigation which it is impossible to make. (Numerous instances of questions which require investigation are already cited in our report, as you know, coupled with the suggestion that the appropriate members of the supervisory or teaching staff in New York City take them up.)
- e. Worthy of consideration. If there are any questions or comments pointing to additions to your report or modifications of it which would really improve it and which can be made without making undue demand upon your time and which, in your opinion, would really strengthen your report, please deal with them. Please put any such additions or modifications, if they are considerable, on a typewritten sheet and attach the sheet to the second galley proof. If any of the questions do not fall into these groups, please classify them as you think best. In any case, please point out briefly and clearly why the questions fall into the groups suggested by me or added by you.

I got the distinct impression that from some source President Mitchel has been made to feel that there are statements in our reports not supported by facts, and which we either have, or should have obtained. I think, therefore, that wherever his questions seem to point to such an opinion on his part, you would do well to consider them with special care, in order to make it clear that a statement about which he seems to have reservations because of the alleged absence of supporting facts is not really a statement of that sort at all. It is, of course, especially important that we do not render ourselves liable to the charge of having made unsupported statements.

I may say, parenthetically, that we have had that consciously, responsibly before us all the time, from the start of a report to the finish.

Where we express opinions based on general observation and experience as distinguished from conclusions based on ascertained facts, that distinction should be clearly set forth in the report itself and made clear in your reply to a question of President Mitchel which may cover this distinction. Please send me such replies as you wish to make at your earliest convenience.

For myself, I do not feel that answers to the questions which President Mitchel has sent would, if incorporated in the reports, materially

affect the value of the reports. I told him, in the conference on September 10, more than once that I would risk my chances with the report in its present form after we had finished our revision of it without incorporating at all the suggestions which he had made. Nevertheless, I agreed to take up the matter with my associates in good faith, and this letter is the result.

I ought to add that, in the end, what I am contending for is that the report should be published in subject matter and form as I transmit it to the committee after my associates and I have finished our revision of all the proof, page proof included. What the committee chooses to do after the report is published as I transmit it is immaterial to us.

Please send your bill for editorial revision of proof, with diary, so that I may transmit it, with my approval, to President Mitchel's office.

P. S.—I am sorry to impose this burden on you, especially just at this time; but I did not see how I could avoid it.

REPORT ON  
EDUCATIONAL ASPECTS OF THE  
PUBLIC SCHOOL SYSTEM

OF THE CITY OF NEW YORK

TO THE

COMMITTEE ON SCHOOL INQUIRY  
OF THE BOARD OF ESTIMATE  
AND APPORTIONMENT

PART II

*Subdivision II*

*Vocational (Industrial) Schools*

WHAT KINDS OF VOCATIONAL SCHOOLS ARE NEEDED?

BY

HERMAN SCHNEIDER, PH.D.

Dean of the College of Engineering, University of Cincinnati; Originator  
co-operative school and shop method of trade education

CITY OF NEW YORK  
1911-1912



## TABLE OF CONTENTS

	Page
I. The Object of Industrial Education . . . . .	765
II. Work as Related to Human Progress . . . . .	765
III. The Problem in New York City . . . . .	773
a. The numerical size of the problem . . . . .	773
b. The industrial scope of the problem . . . . .	774
c. Present plans of industrial education . . . . .	776
IV. The Solution . . . . .	786
1. Education prior to gainful employment . . . . .	786
a. Elementary training for work generally . . . . .	786
b. Specific training for a given occupation . . . . .	788
2. Education accompanying gainful employment . . . . .	790
a. The coöperative system . . . . .	790
b. The continuation system . . . . .	792
V. How to Inaugurate Continuation and Coöperative Schools . . . . .	799
VI. Recommendations . . . . .	802





## VOCATIONAL (INDUSTRIAL) SCHOOLS

### WHAT KINDS OF VOCATIONAL (INDUSTRIAL) SCHOOLS ARE NEEDED?

#### (I)—The Object of Industrial Education

Industrial education has as its object a progressive community advancement through industrial efficiency. Industrial efficiency is determined by three mutually dependent elements—physical health, mental development and manual dexterity.

The health element in industrial education is only slightly within the jurisdiction of the school authorities, and, except in specific instances, is outside the scope of this inquiry. It will be evident, too, that in some occupations hand skill is negligible—for example, in selling. In nearly all trades, however, it is an important factor. Generally speaking, then, we are concerned with the two elements of mental development and manual dexterity.

If industry itself furnished these two elements, there would be no problem of industrial education. What industry furnishes properly and adequately requires no effort on the part of the school. But, if industry emphasizes one element at the expense of another, or utterly neglects both, the school, standing for community advancement, may enter into the situation. Again, if industry in some of its phases requires a certain type of manual work which leads to mental stagnation, the public school's function would not be to initiate nor to increase such manual dexterity; this would not be education. On the contrary, the school's efforts would aim to counteract the dulling effects of the work. It is obvious, then, before any constructive criticism of industrial programs now in operation or suggestions for their betterment can be formulated, that an analysis of the thing we call work, especially with reference to the mental effects of factory work under modern conditions, is necessary.

#### (II)—Work as Related to Progress<sup>1</sup>

There is an instinct for work, but basically it is the instinct for self-preservation and self-perpetuation. Work is our individual and collective struggle for existence; and, out of the mental and physical exertion of the struggle to feed, clothe, and house us, has evolved our present state

<sup>1</sup> Most of the material on *work* in this section (II) is taken from former papers by the writer as follows: The University and the Day's Work, New York State Teachers' Convention, Dec., 1910; The Public School and the Day's Work, National Child Labor Convention, March, 1911; Community Efficiency, Commencement Address, Fitchburg, Mass., June, 1911; An Analysis of Work, in Lecture Notes on Some Aspects of Shop Practice, by Alex. Humphries, 1912.

of being. The whole complex machine of commerce and industry—factory, farm, railroad, bank, office, government—has been built for production, construction, distribution, and protection. The present machine is the product of slow evolution; and the effort of the centuries to build a machine which will better cope with the problem has been the primary cause of our advance in the various activities of life. Integrity, honesty, discipline, sound health, fair dealing, respect for others' rights—these have come from the courageous assumption of one's burden of work, and the opposites of these are the results of the desire to dodge the burden.

And so we have a natural law of work, the substance of which is this: Work and you will reach a higher mental development; cease work and you will degenerate.

The law can be established scientifically if need be, but it is not necessary, for in this case common observation, science, and religion all agree. Each of us knows he will deteriorate physically and mentally if he ceases constructive work, and history shows that this is also true of communities, of nations, and of civilizations. Our proverbs, sacred and secular, affirm it. The cycle of work to wealth, wealth to idleness, idleness to poverty, and poverty to work again, is an evidence of inefficiency following inaction. Mental and physical activity are mutually stimulating; thinking and doing are reciprocal aids.

Mental training and industry have both been most stable when they have been most closely allied; and until comparatively recent years they have been one in fact. Under the old guild and apprentice systems, for example, the workers were trained so well in the commercial field that industrial education was not a special school problem. Work *was* education. To embark upon an apprenticeship was serious business; careful discussion preceded it and ample documentary agreements gave guarantees of execution. Industrial communities were small, and personal acquaintance fostered personal interest. Competition in skillful execution furnished a lively stimulus which led to the enthusiastic use of head and hand coördinately. Generation by generation there was a cumulative mental advancement coupled with a refinement of manual skill in constructive work. In this manner, even long before the days of formal apprenticeship, mankind grew through work.

But there have been two significant changes in the conditions under which work is done.

In the first place, it is only within the past two or three generations that mankind has worked in masses within walls. For centuries mankind did self-directed work, largely in the open air. These were the farmers, the seamen, and the forest rangers. As civilization grew, a constantly increasing minority did self-directed work, individually or in small groups, indoors; these were the artisans in the skilled trades, who met the demands of growing communities. Then came the great change to the factory system through the development of power devices; this dates virtually from the invention of the steam engine.

In the second place, the industrial worker formerly knew a *whole* job, rather than a part of it; he performed a great variety of functions in the completion of his task, instead of endlessly repeating the same operation. The clockmaker made a *whole* clock, working individually, and the necessity of working out every part's relation to every other part gave the worker a mental stimulus, and, therefore, a higher mental development. The finished product was all his own; the desire for self-expression, which every man has, found an outlet through his work; and, once having served his thorough apprenticeship, he worked largely by self-direction. Under our present highly organized industrial conditions the making of a clock is subdivided into a large number of operations. Each workman in a clock factory makes piece after piece of the same kind, principally by feeding material into a machine, and why he does it he need not know and usually is not told. We are putting the brains into the machine and into the management office, and making the workman a purely automatic adjunct.

Now we have, broadly speaking, two types of brain centers; the lower centers controlling habits, and the higher active thinking centers. If one's work is purely automatic repetition requiring no initiative, planning, or diversion, the habit centers are developed and the thinking centers have at best a retarded growth.

In this connection it is necessary to differentiate between casually repeated useful habits of daily life which economize time, and constantly repeated automatic motions which constitute one's major work; the argument is fallacious that, because the former are good, so are the latter. The putting on of one's shoes is governed by one's habit centers; when we were learning to put on our shoes the thinking centers were being developed. Dressing, eating, walking, boarding a car, opening a door are time-saving actions of habit repeated at comparatively long intervals, differing widely in their motor forms, and used as incidental instruments to a larger self-directed action. There is a vast difference between using many habits several times a day as means to self-directed ends, and repeating *one* habit all day as an end in itself. The playing of scales on a piano becomes a habit to the skilled musician; he uses it as a means of performing a stimulating, energizing, thought-requiring production. It is a good and beneficial habit which facilitates and simplifies his performance. But if he learned the scales merely to repeat them ten hours a day, day after day, without meaning and without end, his work would become lethargizing and enervating.

It should be noted, too, that automaticity of itself does not impair one's thinking capacities. When we walk, our habit centers control the action; but we can walk and think at the same time. The evil of automatic machine-feeding is negative rather than positive, in that it requires no constructive exercise of the thinking centers, and, hence, develops only the habit centers. There are, however, certain types of automatic work which are distinctly injurious because they introduce other deteriorating

factors. For example, if the work requires that the eyes be focused constantly at one place, if the motions of the machine before the eyes be a monotonous rhythmic repetition, and if the motions of the hands in feeding the material into the machine be also rhythmic and monotonous, then a deadening hypnotic effect is produced upon the mind; such is the work of a punch-press operator.

Further, automatic work, in addition to putting the thought centers into disuse and producing a lethargizing effect, is repressive of individuality. There has been developed in each of us, through the self-directed work of our ancestors in past centuries, a natural instinct for self-expression. Prior to the day of subdivided automatic operations the worker had an outlet for his self-expression in his work; now, for the automatic worker, it must come in his idle hours, and often in forms which lead to many of our most vexing sociological problems. Unexpressive (or repressive) work is unnatural work, and must incite to mental and physical protest.

Now, we cannot reverse our present economic order of things. Work which does not require mental activity is increasing, and will continue to increase for a long time to come. The condition is here and philosophical discussion will not remove it.

The situation, then, sifts down to this: Energizing work is decreasing; enervating work is increasing. We are rapidly dividing mankind into a staff of mental workers and an army of purely physical workers. The physical workers are becoming more and more automatic, with the sure result that their minds are becoming more and more lethargic. The work itself is not character-building; on the contrary, it is repressive, and, when self-expression comes, it is hardly energizing mentally. The real menace lies in the fact that in a self-governing industrial community the minds of the majority are in danger of becoming less capable of sound and serious thought, because of lack of continuous constructive exercise while engaged in earning a livelihood.

It is evident, then, that the general law of labor must be divided into two laws, namely, the law of energizing work, which makes for progress, and the law of enervating work, which makes for retrogression. Nearly all the work still done in the open air, where there is a dependent sequence of operation, involving planning on the part of the worker, is energizing work. Specific examples may be cited in farm work, railroad work, and the building trades. Certain work done indoors, under good conditions of light and air, is also energizing; for example, the work of a toolmaker, a locomotive assembler, and a cabinet maker. The enervating work has come through the subdivision of labor in factories, so that each worker does one thing over and over in the smallest number of cubic feet of space. This type is recognizable at once in the routine of the garment worker, the punch-press operator, the paper-box maker, and the shoe worker. On small, isolated farms, where a certain routine week by week has been established by long usage, mental de-

velopment lags and the work may not be as energizing as in certain indoor occupations. In the main, however, most of the enervating work is done indoors.

Aside from the broader factors, such as climatic conditions and racial characteristics, it is safe to say that the morale of a community depends upon the kind of work it does. A rural community of about twelve thousand people, having clean political conditions, a high moral tone, few jarring families, well kept gardens, and a good average of intelligence, is a desirable place, from the manufacturer's viewpoint, in which to locate a factory. If a manufacturer locates in such a place and employs three thousand of the men, women, and children in purely *automatic, noisy, high-speed work*, the town will change very materially in one generation. Its politics will become corrupt and its morals lax; its citizenship will lose its former mental stability and fly eagerly and earnestly from one spectacular "ism" to another; its families will be on nervous edge with family discipline gone; its yards and houses will lose their tidiness; saloons will increase—in a word, it will become a "factory town." And what was once a good community, with a high community efficiency, and, therefore, a safe place in which to invest money, becomes a town of low community efficiency and a constant menace to the industry itself. Every detail of the town's life is affected. Religion lags, while the amusement parks thrive on Sunday; for, since the weekday work is repressive, an outlet for pronounced self-expression is demanded in the idle hours—or, to put it in another way, Nature goes on the defensive. The slowly upbuilt appreciation of the fine arts is quickly destroyed, for this cannot grow without harmony, orderly thought, and the desire to express ideals. Respect for law diminishes, for the law is put in the same class as an electrically wired strike fence. These significant changes are not the fault of the people who work; they are logical natural products of the work itself.

A classification of work from the most enervating to the most energizing, having in view the development of the whole man, is not only a desirable, but a necessary, thing in attempting to solve the problem of industrial education. Probably there is no type of work (if it may be dignified by the word *work*) more enervating than a repetitive operation of complete uselessness. Even the lowest order of mentality would rebel in time against doing a thing merely to undo it, again to do it and undo it, hour after hour, day after day. Let a man, no matter how stupid, be required to carry a stone a short distance, drop it, pick it up, carry it back to its first position, and repeat this thousands of times, forward and backward, add personal isolation to the task—how long could he endure it before his spirit broke and his mind was overturned? If it were desired to disintegrate him speedily, the addition of foul air and nerve-racking noise would accomplish it.

It will be noted that the sheer horror of this work is because it lacks meaning, fails to accomplish an end, and is purely absurd repetition. It

is the absolute zero of work. Certain types of automatic industrial work are almost as enervating as this, the only difference being that the industrial work is not useless. But frequently the worker's only reason for knowing it is not useless is the fact that he would not be paid for doing it if it were; that, in some cases, is the full extent of his knowledge of why he is doing it. On the other hand, the most energizing work is probably that of a pure research man in science; especially where the building of apparatus and some outdoor investigation are necessary parts of his work. Between these two extremes lies the whole range of human labor.

For the purpose of emphasizing the different factors which make the effects of work so variable, we may devise a scale within the more usual ranges of human work, placing the most energizing at the 100 per cent. point, and the most enervating at the zero point. The 100 per cent. work selected is that of the locomotive engineer, because his work has the following elements:

- (a) It is done in the open air.
- (b) It provides a well-rounded physical development.
- (c) The constant improvements in locomotive design and railway appliances generally require continuous mental development.
- (d) Mental alertness is constantly required for emergencies.
- (e) A comprehensive grasp of the whole interdependent scheme of transportation is essential. This firmly establishes mental coördination.
- (f) The conditions under which the same run is made are never alike.
- (g) The work itself—not preachments or popular acclaim—the work itself breeds in the engineer the highest quality of good citizenship, namely, an instant willingness to sacrifice himself for the lives in the train behind him. This makes for the best type of civic responsibility.

The zero point on the scale, or the most enervating work selected, is the work of a girl, in her formative years, in a steam laundry, when the following elements prevail:

- (a) Supersaturated, vitiated air.
- (b) Standing in a strained position.
- (c) The work consisting of feeding one piece after another of the same kind at high speed into a machine.
- (d) The hours of work being so long that fatigue poisons accumulate.

The scale is crude and lacks scientific accuracy. A statement, for example, that the work of a laster in a shoe factory is 40 per cent. energizing would be a guess. But the purpose of the scale is not so much to arrive at a percentage as to establish some standard of actual work for the purpose of diagnosis and treatment. Three investigators, analyz-

ing the work of a laster, might classify it as 30 per cent., 40 per cent., and 50 per cent. energizing. The difference in their classifications would lead to a closer analysis, and hence to a surer treatment.

It should be noted that, where the work is done under conditions which permit the operatives to talk, without endangering them or interfering with their work, the rating is higher than where such is not the case. When we walk, our habit centers control the action, but we can walk and think at the same time. Similarly, in automatic occupations, if the motions are not too rhythmic, both of the hand and of the machine, and conversation is permitted and possible, the work is not nearly so repressive. In a certain mill, employing girls at strictly automatic work, the employees were placed facing one way, so that one operator looked upon the back of another; between adjacent operatives was a small partition. This mill had to replenish its entire force each year, because of the nervous strain of the work, until the scheme was changed to a round table plan, which encouraged conversation. After this the losses were normal.

Work cannot be classified by trades; for example, it could not be stated that the work of shoe workers was at a certain point on the scale. In this industry there are from fifty to one hundred and fifty kinds of work, depending upon the factory organization. In different shoe factories the same occupation will vary in its position on the scale by reason of environment. The elements whose effects determine the positions on the scale are principally the following: monotony, automaticity, noise, bad ventilation, personal isolation, posture, and fatigue.

It will be evident, then, that the problem of industrial education cannot be approached from the point of view of trades as defined by the materials used in the trades, as, for example, the wood-working trade, the iron-working trade, the textiles, or the garment-working trade. In a machine shop the punch-press operator has an enervating job, while the tool-room apprentice has a highly energizing job. In the foundry there is the same difference between the job of the molding machine operator and that of the skilled molder. In fact, in nearly every trade, classed by materials, this wide variation in the effects of different jobs will be found. Since the problem confronting us is the relation of education to industry, necessarily we must classify work by its educational values rather than by the material used or produced.

It must be remembered also that the whole human organism has been rapidly placed under new stresses by modern factory organization after centuries of more leisurely, quiet, diversified, and self-directed work; and their effects upon the kind of citizenship we are building must be a major consideration of the public school, in considering its connection with industry. Any policy of industrial education, which the public school adopts, must be built upon the rock-bottom basis of the mental and physical soundness necessary to the citizenship of a self-governing country. The object of all education is to make a good citizen, and, while

the first duty of a good citizen is to earn his own living, there is his equal duty to be a good citizen in the civic sense; and it must be remembered that both duties require a sound body and a sound mind.

It must not be assumed for a moment that a proper measure of production on the part of each worker is at all minimized in this argument; on the contrary, a high degree of both mental ability and manual skill in industry is affirmed as being vital to the continued industrial well-being of a community; but in some cases the school, at least, must differentiate between shaping life to industry and shaping industry to life. Initially and fundamentally, industry is a machine built to simplify the basic problem of self-preservation; but modern industry is in danger of becoming an end rather than a means. In some of its phases it controls the individual, and tends to cause him to deteriorate; it ought to be controlled by him and help to build him up. It is the old story of Frankenstein. In so far, then, as industry offers work which in itself leads to increased manual skill, continuous mental development, and well preserved health, the school need have no hesitancy in joining hands with it in the training of workers. But, if the skill required is an endless repetition of the same simple motions, involving no mental activity on the part of the worker, and leading to physical disorders, the school could not justify itself in initiating such manual skill. The school can not ignore, however, the fact that such work exists. It has a very definite function to perform because of the very existence of this type of work; but its function is not supplemental, it is counteractant; and ultimately its work in a counteracting way would be the most valuable work it could perform for industry. Nor will it do for the school to argue against these unfavorable conditions in modern industry. Automatic and subdivided work are here to stay, and, while many of their evils can and ought to be modified in the factory, the fact remains that they must be met by school authorities, since each year thousands of children—young men and young women—go into these enervating occupations; and the amelioration of the lethargizing effects of the work is a moral obligation which cannot be dodged.

Industry wants skilled workers. By reason of its new policy of the subdivision of labor, its need is no longer for the more broadly skilled artisans; hence, its apprenticeship system is gradually disappearing; further, because of the demand on the part of managers for greater production, the superintendents and foremen feel that they cannot be bothered with apprentices. But, because a certain amount of skill is still necessary, industry turns to the school for help.

It is complained that the school no longer trains as it once did. As a matter of fact, the school never did train for industry specifically. The whole trouble is that industry has ceased training for itself. This training was originally very valuable education, and, since the youth of the country have been deprived of the advantages which the old apprenticeship system gave, it may be properly assumed that it is the function of





VOCATIONAL SCHOOL FOR BOYS, MANHATTAN. CARPENTRY SHOP.

All tables, checker boards, storage boxes, etc., now used in recreation centres throughout the city have been made in this shop. Work valued at \$5,000 has been turned out in this shop for the Department of Supplies of the Board of Education.



the school to inaugurate such plans as will give manual training and which, at the same time, will make for mental development and sound physical health.

The public school must insist upon carrying out the prime function for which it is organized, namely, the sound mental, material, and moral advancement of the whole people.

### (III)—The Problem in New York City

#### a. The Numerical Size of the Problem

In all the public schools of New York City (1909-1910) the average daily attendance (not enrollment) was 586,673. If these pupils were placed in a straight line, each one having two linear feet of standing room, the line would extend 222 miles. The average daily attendance in the day high schools was 30,252; this line would be 11 miles long. The total number graduated from all the day high schools (1910) was 2,477; the line would be about one mile long. The average nightly attendance in the night elementary schools was 27,725; the line would be 10½ miles long. The average nightly attendance in the night high schools was 9,343; the line would be 3½ miles long. The average daily attendance in the boys' day vocational school was 109. The line would stretch about one short city block. The average daily attendance (1911) in the girls' day vocational school was 360.

Employment certificates are issued by the Department of Health to children between the ages of fourteen and sixteen years. The number of certificates issued is shown by the following table:

*Employment Certificates Granted*

	Year 1910	First Ten Months, 1911
Manhattan .....	18,537	17,295
The Bronx .....	3,278	3,192
Brooklyn .....	11,672	12,066
Queens .....	2,296	2,488
Richmond .....	567	437
New York City .....	36,350	35,478

These figures indicate, in part, the size of the problem of the education of workers. The terrible school mortality from elementary schools to high school graduation class also shows that the immediate and pressing problem is to be found in store and factory and office; that is where the children are (see table, Appendix I). It is not in the school, for the majority of children who are of an age to acquire industrial training are not there.

### b. The Industrial Scope of the Problem

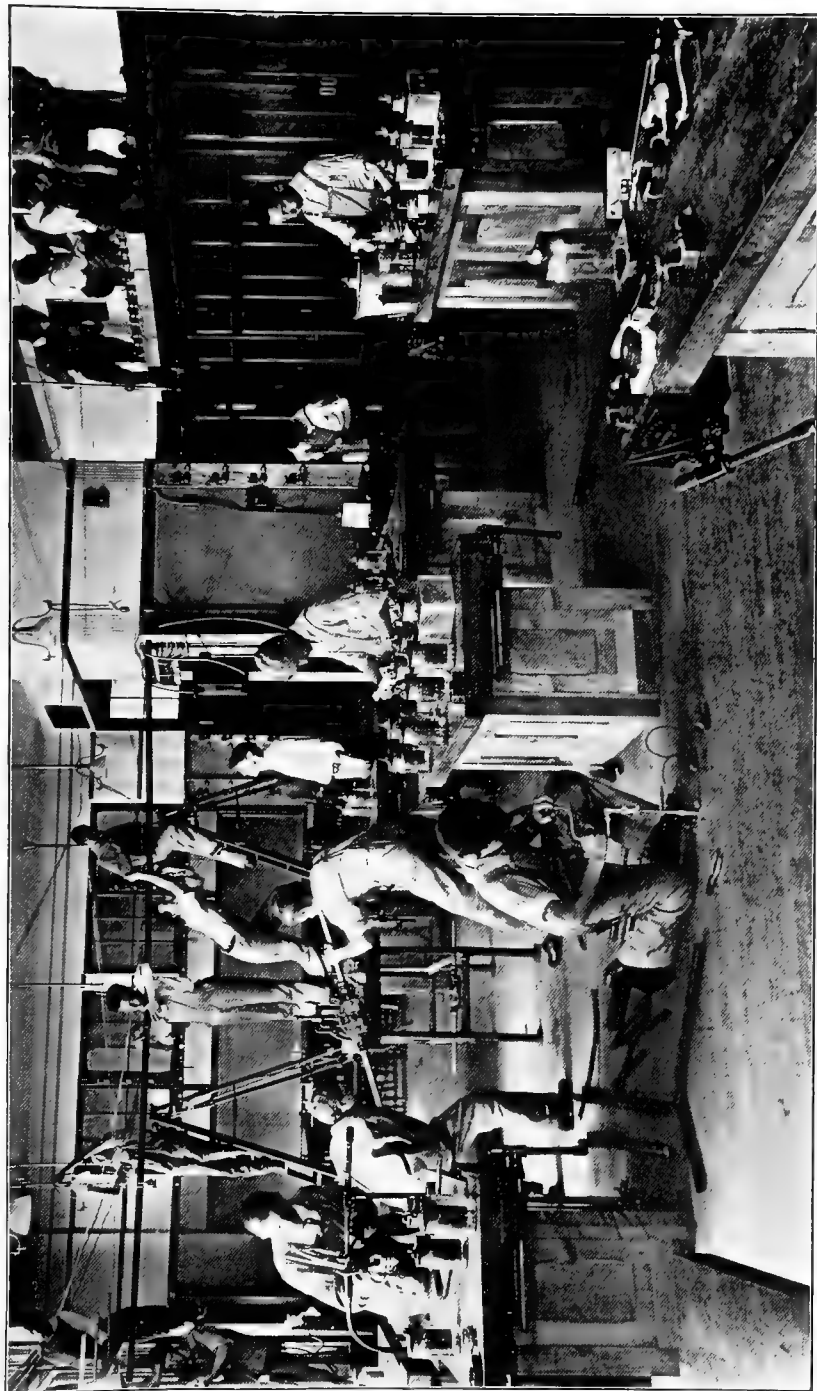
Heretofore educational efforts in industrial education have been directed almost exclusively to the more energizing trades, such as plumbing, woodworking, blacksmithing, machine shop work. A public school system, however, must have a comprehensive community efficiency as its objective, and from this viewpoint the machine-feeding occupations present the more serious problem. Hence, they must have at least the same amount of attention as the energizing work. If all the elements which make a citizen a good civic unit for a self-governing community are considered as the special business of the schools, then the problem of the mentally and physically enervated young worker is its major task.

On this basis the industrial scope of the problem is limited only by the great variety of occupations into which the children go. A glance at the industrial directory will show that in its scope the problem is no less formidable than in its size.

Unfortunately, the 1910 census figures on occupations are not yet available. The reports of the New York State Bureau of Labor give data only for a limited number of factories in particular industries. Similarly, the recent reports of the Bureau of Commerce and Labor at Washington furnish insufficient material from selected trades. The only figures on occupations available are those being compiled by the Permanent Census Board. At this time the board's material furnishes information only for the district of Manhattan south of Fourteenth Street; this table is shown in Appendix I. That this latter is only approximately correct is shown by the following letter from the Permanent Census Board, dated September 28, 1911:

"Inclosed you will find a summarized statement of the occupations of children between 14 and 18 years of age, living below 14th Street, as shown by the records of this office. Your request that this information be tabulated included the subdivision of these occupations into skilled and unskilled labor. The material more or less naturally divides itself into unskilled work, factory work, and what we ordinarily term the skilled labor of the trades, but failure to know the exact nature of the work done by the individual in each case makes impossible any rigid distinction or comparison, either between the various occupations of each class or between the occupations of different classes.

"I have talked somewhat at length with various people well informed on this subject—notably Professor Richards of Cooper Union—and all that I have learned tends to emphasize this conclusion. Professor Richards is particularly emphatic on this point. I am, therefore, sending you the list arranged in order of numerical importance. It seems to me that even this arrangement cannot fail to be extremely significant, as out of almost 25,000 children who are represented such a large number are engaged in casual work or 'blind alley' occupations.



ELECTRIC WIRING SHOP IN VOCATIONAL SCHOOL FOR BOYS, MANHATTAN.

This is the most popular course in the school.



"I think it is only proper to add that I believe we have not found a large number of children between 16 to 18 years of age who should have been listed, and possibly an equally large number between 14 and 16 years. Many people do not regard children above 16 years of age who are employed, and have been employed for some time, as children, and without intentional deception they fail to include them in the statement given to the officers. These facts have developed again and again when the census has been amended.

"On the other hand, children between 14 and 16 years of age are omitted through a fear that something might happen to take them away from their employment, if the desired information is produced. How many there are in both these classes I am unable to say. I anticipated such a result from the start, but believe that, as the census is amended from time to time, and as we come to know those children who leave school to go to work, we can, in the course of a few years, very closely approximate the numbers actually existing between those ages.

"I think, however, you will find the list submitted nearly—if not fully—as significant as the one including all the names. We have some additional information concerning the number of positions held by the various children which possibly might also prove of service. It has not as yet been arranged, but, if needed, that could be done without any very great additional effort.

"Very truly yours,

"(Signed) GEORGE H. CHATFIELD,

"Secretary."

This table gives a general idea of the problem of industrial (including commercial) education which the school authorities must face in this one division of the city. Some of the occupations are fairly energizing and require no manual dexterity; for example, those of errand boys and girls, stock boys and girls, wagon boys, office boys and girls, messengers, newsboys, vendors, bellboys.

It is highly probable that few of these occupations were chosen with any forethought. The child took the first job that offered simply because he wanted to or was forced to work. Since these are children's occupations, by the time the worker is 18 years old it is necessary for him to go to a higher position or seek a job with another firm. The problem for this class, therefore, is, first, one of vocational guidance, and then of collateral instruction to a predetermined occupation.

Another large division in this table is made up of more or less automatic workers, such as machine operators, garment workers, paper-box makers, hat and cap workers, button makers, folders, and cigar makers.

The very noticeable feature of the table is the small number of children in highly energizing positions, such as certain departments of the printing trade, book-binding trade, plasterers, masons, painters, decorators, carpenters, and iron workers.

The statistics for Division I must not be assumed to represent the general condition of the city; on the contrary, certain parts of Brooklyn will show a much higher percentum of energizing trades and fewer "blind alley" occupations, while certain upper east side districts of Manhattan may show many purely automatic and hence enervating trades. It may safely be assumed, from the State Bureau of Labor's incomplete compilations, that, when complete statistics are available, the same multiplicity of occupations will be found to prevail in the other industrial and commercial divisions of the city. It should be noted, too, that in some so-called trades there are many subdivisions; in shoemaking, for example, there are between fifty and one hundred and fifty separate and differently named kinds of work.

### c. Present Plans of Industrial Education

Schools not under the direction of the Board of Education are not included in this inquiry.

#### 1. Day Industrial Schools

The city has two day industrial schools—the Vocational School for Boys (138th Street near Fifth Avenue) and the Manhattan Trade School for Girls (23d Street, east of Third Avenue).

*Vocational School for Boys.*—The boys' school is intended for those boys who desire an education that will prepare them for industrial work as distinguished from office work. The courses offered are as follows:

##### A. Vocational:<sup>1</sup>

##### Woodwork—

- House carpentry and construction.
- Cabinet making and bench work.
- Wood turning.
- Pattern making in wood.
- Use of wood milling machinery.

##### Metal Work—

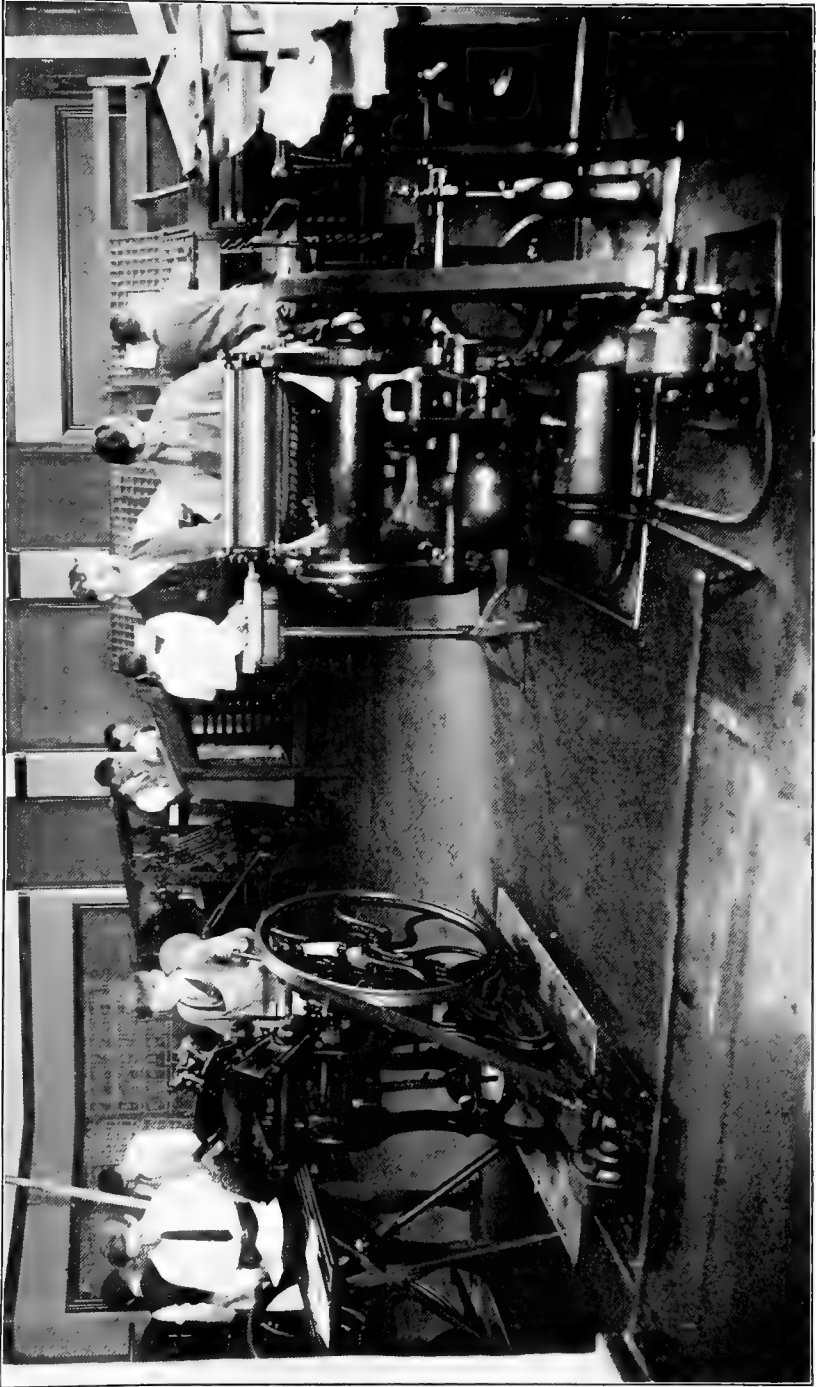
- General machine shop practice.
- Sheet metal work.
- Forging.
- Plumbing.
- Electric wiring and installation.

##### Printing—

- Estimating costs.
- Composition.
- Imposition.
- Presswork.

<sup>1</sup>From a pamphlet issued by the school.





PRINTING SHOP IN VOCATIONAL SCHOOL.



## B. Drawing:

## 1. Mechanical—

Working drawings.  
Isometric drawings.  
Architectural drawings.

## 2. Freehand—

Industrial design.  
Making and reading blue prints.

## C. Non-vocational Subjects:

## 1. Trade mathematics—

Arithmetic.  
Use of symbols (elementary algebra).  
Plane geometry as used in trade.  
Trigonometry as used in trade.

## 2. English—

Business letters.  
Reading, with oral expression.  
Drawing of contracts.  
Writing specifications, etc.

## 3. Industrial history; civics.

## 4. Industrial and commercial geography.

## 5. Applied physics and chemistry.

## 6. Simple bookkeeping.

## 7. Elements of commercial law.

This school aims to bring a boy in contact with all of the various lines of industrial work mentioned under the heading "Vocational," to ascertain his bent toward any one of the particular trades offered, and to give him major work in the occupation selected. The school is not a trade school. It does not pretend to send out an artisan; it does claim to give sufficient manual dexterity and industrial insight to enable a boy to shorten materially his term of apprenticeship in a commercial shop. A good foundation is established upon which to build a real industrial apprenticeship in a commercial shop. The chief virtue of the school lies in the attraction it offers a restless and school-sick boy to continue in a less academic but vigorous school course. It renders good service as an upbuilder of the youth's mental and physical qualities, and these are necessary for industrial success.

The number of children in average daily attendance in this school during 1910-11 was 266. It will be observed, of course, that the number is almost negligible in the sum total of boys who go to work before 16 in New York City. The type of school is good and is recommended as one of the means of attacking the problem in New York City. If addi-

tional schools are to be built, however, and if the principal objects of such schools are industrial insight and sufficient acquaintance with the various occupations to permit the wise selection of a trade, the industrial scope of the school work should be increased and should be less intensive. At the present time too much stress is placed upon manual skill in one particular trade, or one particular branch of a trade.

*Manhattan Trade School for Girls.*—The girls' school "offers an opportunity to a girl on leaving school to learn to be a skilled workwoman in a shorter time and in a larger and more intelligent way than through trade training alone." The courses offered are as follows:

A. Vocational:

Electric Power Operating—

General operating.

Shirtwaist making.

Children's dressmaking and underclothing.

Women's underwear, kimonos, and dressing sacques.

Special Machines—

Hemstitching.

Buttonhole.

Embroidery (hand and bonnaz).

Dressmaking Operating—

Lingerie.

Fancy waists and suits.

Straw Sewing—

Women's and men's hats.

Dressmaking—

Uniforms and aprons.

White work and simple white embroidery.

Gymnasium and swimming suits.

Dressmaking.

Millinery—

Elementary work for assistants, improvers, frame makers, and preparers.

Novelty Work—

Use of paste and glue.

Sample mounting, sample book covers.

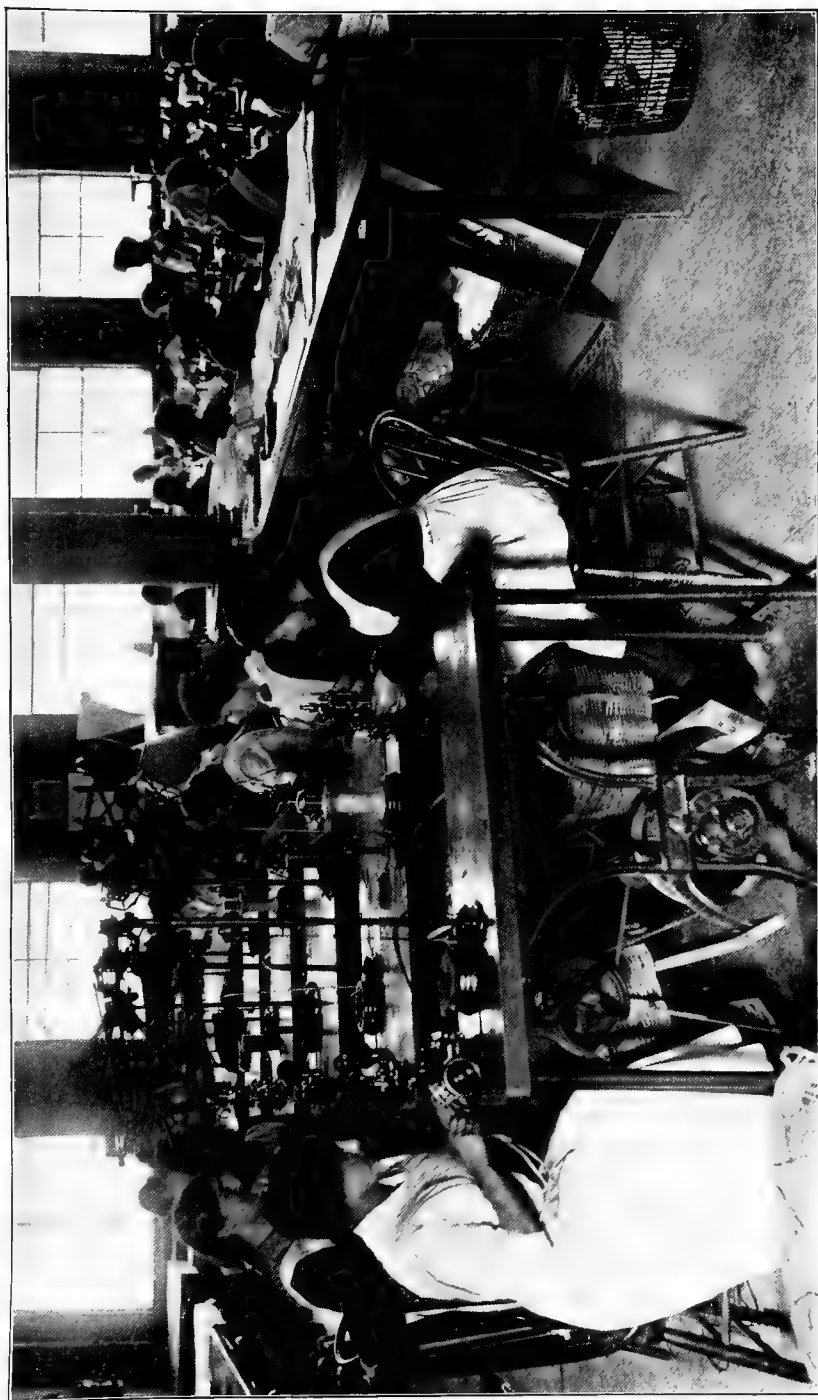
Labeling.

Novelty work, jewelry-case and silverware-case making.

B. Art:

Elementary—

General courses adapted to the work of the trade departments.



MANHATTAN TRADE SCHOOL FOR GIRLS.

Operating Room in which is taught the use of the Electric Power Machine.



B. Art (*Continued*):

Advanced—

Adapted to the trades as above.

Special Trades—

Stamping and perforating.

## C. Non-vocational Subjects:

Business arithmetic.

Business English.

Industries and textiles.

Civics.

Ethics of trade.

Cost of living.

## D. Physical Education:

Physical examinations and treatment.

Exercise—invigorating, corrective, and recreative.

Talks on hygiene and health.

The average daily attendance (1911) is 360. This school is in a transitional stage; the present director having taken charge September, 1911. The girls are brought into contact with the various occupations of the vocational curriculum shown above, and the especial effort of the school is to give its pupils just enough manual dexterity and sufficient industrial intelligence to bring them to the beginning of an apprenticeship. The policy of this school is particularly sound, in that it aims to get the girls beyond the "blind alley" jobs at about \$3 a week and enables them to enter an apprenticeship at about \$5 a week. The school is not a trade school, and is not intended to be such. Instead of spending a great deal of time in training a few artisans, as it would if it were a trade school, it spends its efforts and funds on a much larger number of girls to start them safely in industrial life. As a prevocational school for girls, this school can be most highly recommended. A multiplication of this type of school would go far toward solving many of the problems of the juvenile female workers.

Since the children who go to this school are nearly all very poor and can afford to spend only a short time at the school, and since the work is frankly and wisely aimed to bring them to a safe beginning of an apprenticeship, only a little time is given to what are usually classed as cultural subjects. The cultural work given, however, is vitalized by connection with the distinctly vocational work.

The particular problem presented to the public school system of New York City, in so far as the girls who must go to work at 14 years of age or thereabouts are concerned, is being admirably met in the Manhattan Trade School for Girls. The major criticism to be made of the work

is really not a criticism of the school, but of the public school system, which restricts the teachers to classified lists. The widest possible freedom, in the selection of teachers for vocational work, should be given to the directors of vocational schools, since the peculiar qualifications necessary to success in distinctly vocational work cannot be determined by written examinations. A minor criticism of the work—and this is also true of the work of the boys' school—is that it is too restrictive and does not cover sufficient types of occupations. This criticism is really not of these two particular schools, but of the system, which does not give adequate space and sufficient financial support to enable them to carry on the work properly.

## 2. The Day High Schools

The day high schools with full manual training courses do not pretend to be industrial schools, as the following statement from the principal of Stuyvesant High School shows:

Extract from letter dated July 1, 1911, addressed to Professor Hanus by Principal Ernest R. Von Nardroff, of the Stuyvesant High School:

*"Aims.*—Stuyvesant High School aims to give secondary instruction to young men of academic tastes, who possess a predilection for scientific, mathematical, and technical subjects.

"At present the graduates of Stuyvesant generally enter higher institutions of learning in order to prepare as physicians, dentists, chemists, foresters, metallurgists, engineers of all kinds, patent office lawyers, etc. A few graduates intend to prepare as teachers of science or as writers of science. Also a few students plan to prepare as teachers of languages and of mathematics.

"Of the graduates who do not go to higher institutions, some go into surveying; some into automobile or other manufacturing industries, as salesmen, designers, or testers; some go into architects' offices; and some go into building concerns. The great mass of boys who do not graduate at all generally enter some commercial occupation. Practically none of our pupils seek positions as bookkeepers, stenographers, or as typewriters. It is my general observation that the longer a boy not graduating remains at school the more he tends to seek employment of a scientific or technical character. Practically no boys coming to Stuyvesant High School care to enter a trade."





FORGE SHOP IN STUYVESANT HIGH SCHOOL, MANHATTAN.



Principal von Nardroff's statement is verified by the following table:

### Report on Graduates of Stuyvesant High School

June, 1908—June, 1911

Amherst .....	1	College of the City of New York.....	22
Brooklyn Law School .....	2	Cooper Union .....	3
Brown University .....	1	Foreign Technical Schools .....	2
Business Schools .....	1	Fordham University .....	1
Columbia University:		Long Island Medical College .....	3
Mines .....		Mechanics Institute .....	1
Medical .....		Mendell Engraving School .....	1
Chem. Eng. ....		New York College of Dentistry .....	13
Pharmacy .....		New York Law School .....	2
Fine Arts .....		New York Normal School of Physical	
Architecture .....	46	Education .....	4
New York University:		New York College of Pharmacy .....	3
Commerce .....		New York Training School for Teach-	
Law .....		ers .....	2
Medicine .....			
Science .....	9	Total Graduates in College.....	156
Penn. State Agric. ....	1		
Pratt Institute .....	1	In business:	
West Point .....	1	(Drafting, laboratory work, dental	
Williams .....	2	assistants, dry goods, estimating,	
Cornell University:		surveying, salesmen of manufac-	
Civil Engineering .....		tured products) .....	59
Mechanical Engineering .....		In Trades .....	1
Agriculture .....	34	Deceased .....	3
		No information .....	32
		Total Graduates .....	251

### 3. Evening Schools

Appendix K (report of Matthew J. Elgas, District Superintendent in Charge of Evening Schools, to Superintendent Maxwell) of the 12th annual report of the Superintendent of Schools, for the year ending July, 1910, contains a statement of the present situation in the New York evening schools with reference to industrial education, and a proposal for further development. Of the number attending the evening schools, a good proportion are foreigners, studying English.

On page 518 of the report appear the following statistics and comments:

"An analysis of the attendance gives the following interesting statistics:

#### High Schools

No. of pupils who attended every evening (120).....	338
" " " " " 110 evenings and less than 120.....	1,793
" " " " " 100 " " " " 110.....	2,018
" " " " " 90 " " " " 100.....	1,594
" " " " " 80 " " " " 90.....	1,158
" " " " " 70 " " " " 80.....	1,208
" " " " " 60 " " " " 70.....	11,429
" " " " " less than 60 evenings.....	15,640

## Elementary Schools

No. of pupils who attended every evening (90).....	2,234
" " " " " 80 evenings and less than 90.....	6,050
" " " " " 70 " " " 80.....	8,266
" " " " " 60 " " " 70.....	10,154
" " " " " less than 60 evenings and more than one week.....	33,393
" " " " " one week or less.....	11,937

"A study of these figures shows that the problem of how to improve the regularity of attendance in the evening schools is still unsolved. New York is no exception; the conditions are the same elsewhere, and in many cities even worse. It is an inherent difficulty in evening school work. I [Mr. Elgas] have already referred to one cause of the difficulty, namely, the large shifting population of the city; then, again, what is too easily obtained is not properly appreciated. Another cause, no doubt, is the pressure of work at certain seasons of the year, work which sometimes continues night after night for many weeks. When the pressure ceases the pupils have lost interest and feel disheartened, and do not return. Then there are always some pupils who have little worthy ambition and who are easily carried away by the inclination rather to spend their evenings in recreation than in study. For these especially the suggestion made by you [Dr. Maxwell] on several occasions, of charging a small fee for registration, might have some effect. The fee could be returned at the end of the season if the attendance of the pupil had reached a certain standard."

On pages 542 and 546, inclusive, are shown the subjects taught in the evening high and elementary schools. These may be subdivided into the common school branches of the day school, commercial subjects, such as stenography and typewriting, and instruction to supplement the work in the highly energizing trades.

It is unquestionable that, if a worker who does enervating work each day attempts any of the night courses offered, they will be an added burden rather than a relief or a benefit. A tired-out automatic worker cannot be blamed for having "little worthy ambition" and for "being easily carried away by the inclination rather to spend evenings in recreation than in study." It is not obvious, bearing in mind our analysis of work, that charging a fee for night school delinquents would have any good effect. From the point of view of the promotion of good citizenship, the enervated worker is the most important for the school to consider; and consideration of his special needs must be based upon the analysis of the mental and physical results of his day's work. One of the causes underlying the losses is probably shown on page 520 in the following statement:

"With the new courses of study for the evening high school approved by the Board of Superintendents two years ago, it became necessary to prepare syllabuses for the different subjects, in order to make the work



WOOD TURNING AND PATTERN MAKING CLASS IN STUYVESANT HIGH SCHOOL, MANHATTAN.



in the several schools uniform and definite. Accordingly, in December last I appointed from among the teachers 21 committees, consisting of from three to seven members each, to whom was assigned the task of preparing these syllabuses.

"A preliminary conference of all these committees was held on Saturday morning, December 11, at the High School of Commerce, at which I gave a brief outline of the work to be done and the lines which were to be followed.

"The committees thereafter held frequent meetings and, after completing their work, copies of the various syllabuses were sent for criticism to all the principals and teachers in the schools, and on May 12 last they were submitted for approval to the Board of Superintendents. The Board, I am happy to say, has approved them tentatively for the coming year, after which the opinion of principals and teachers is to be asked as to their practical results. In the meantime I hope that they will be put into printed form for distribution among the teachers of all the schools."

It is probable that this standardization of courses without an analysis of the daily work of students has had much to do with the losses and small attendance; the energized workers continue, the enervated workers drop out.

On page 521 the trade subjects taught in the evening trade schools are given as follows:

"The trade subjects include carpentry and joinery; cabinet making; blacksmithing; plumbing, heating, and ventilating; physics and applied mathematics; industrial chemistry; applied engineering; trade drafting; printing and typesetting; bookbinding; leathercraft; advanced dressmaking and millinery; and domestic science."

Here again is shown the tendency to provide for the energized workers only, neglecting the very important problem of the enervated workers.

It is interesting to note in this connection that there is a compulsory attendance law, requiring all boys between 14 and 16 years of age to attend evening school if they have not completed the elementary day school course. It is also stated (page 522) that it has been very difficult and, in most cases, impossible to enforce the law. Zeal for the cause of education is a good thing; but when a tired-out enervated worker, who has been compelled at 14 years of age to take up 8 or 10 hours of daily grind, is forced by law to forego the recreation which nature insists he shall have, and to sit for several more hours at night for purely academic instruction, we have evidently overreached ourselves. The classes visited, which exist because of the compulsory law, inspired no feeling but pity for the children. Some of the pupils were asleep, and all but a few of them looked fagged out; and these few, on investigation, were found to be apprentices in the machinist, bookbinding, and other energizing trades. In his 13th annual report Superintendent Max-

well recommends that compulsory night schools for these juvenile workers be discontinued. We concur in this recommendation emphatically.

However, the night schools are doing three most commendable kinds of work, and doing them well, namely: teaching English to foreigners, teaching industrial science to those in energizing occupations, and giving instruction in dressmaking, millinery, and household science.

The foreigners' classes are lively and enthusiastic; the teachers work hard and are inspiring.

The instruction supplementing the work of energized workers—power plant operators, electricians, molders, machinists, carpenters—is, of course, night continuation school work. The classes are composed of adults, the instruction is thorough and to the point, and the students are alert.

The women's classes are made up of garment workers and milliners seeking additional instruction for advancement in their day trades, and of wives of workingmen who want to save money by making their own hats and dresses. The latter predominate. In these classes, too, the instruction is good and the interest keen.

One of the surprising things in connection with the night school management is the curious rule regarding the use of gymnasiums. If a night school principal wants to have athletic exercises he is required to obtain a special permit for each night, and must state the particular reason for each request. A good romp is often good medicine; it is one of the counteractants needed most by those whose work is done in strained physical positions or at high pressure, or which is in any other way repressive. The connection between sound health and industrial efficiency is too obvious for elaboration. Every school gymnasium should be open every night under the direction of physical directors who know the needs of those who work.

### **The New York Parental School (near Jamaica, Long Island)**

While this school is not classed distinctly as an industrial school, its work, nevertheless, is of such a character as to warrant its having a prominent place in this report. The school is organized for the care of truants and delinquents. It is without question the best prevocational school the writer has seen. In Appendix E of Superintendent Maxwell's 12th annual report (Report on the Operation of the Compulsory Education Law by Edward B. Shallow, Associate Superintendent, page 385) is a statement on the work of this school. A part of this statement will be found in Appendix II of this report. The writer concurs in what Principal Todd and Superintendent Shallow say with regard to this school. The particular merit of the parental school lies in the fact that every boy who stays there a sufficient length of time is brought into contact with most of the trades necessary to the maintenance of a community. The boys work one-half day and go to school one-half day in







BUILDINGS AND HORMITAGES OF THE NEW YORK PARENTAL SCHOOL, BOROUGH OF QUEENS.

The institution is maintained on a farm covering 107 acres.

In accordance with the provisions of the Compulsory Education Law, this (model) school and the two smaller institutions in Manhattan and Brooklyn were opened for the compulsory attendance of children under 16 years of age.



HUNDRED AND DISMITHOUS OF THE NEW YORK PARANTAL SCHOOL, HONORARY OF OFFERS.

provision of the Compulsory Education Law this tenant school and the two smaller institutions in Manhattan and Brooklyn provide for the confinement of truants under 16 years of age and for a period not exceeding two years.



alternating sections. They do farm work, cut cord wood, do plumbing work, mend the fences, help in the cooking, build furniture, work in the laundry and the bakeshop, and, in fact, are engaged in all of the work necessary to the maintenance of a community. Careful observation is made by the teachers to obtain the boy's natural bent, and, after it has been found, his major manual work is in that particular line. But, even after his major line of work is determined, he is detailed at regular intervals to assist in various parts of the work necessary to the school's maintenance. The scheme is so devised that a boy does not obtain a high degree of dexterity in one particular line, but is brought into contact with many different types of work, and is thereby enabled to select his job more wisely when he goes to work for a living. The school develops broadly the ability to execute manually, it is man-making in its discipline, it furnishes sound mental development based, to a certain extent, on constructive work, it gives the youth an acquaintance with a number of occupations, and the military features of the school develop promptness and sturdiness without in any way being repressive. Besides doing all of this manual work, the boy receives nearly as much mental instruction as he would if he attended the usual standard school.

It is regrettable that the accommodations of the school are so limited that the children sent there can remain, as a rule, only for a maximum period of about seven months. Surely the work of taking a wayward youth and giving him training which will make him a sound industrial and civic unit is of sufficient importance to the City of New York to warrant the school authorities in immediately enlarging the parental school. The writer is inclined to believe, after careful observation, that most of the children in the parental school are not subnormal but supernormal. They have sharp wits, an abundance of juvenile energy, and a great deal of initiative. Their waywardness is probably due more to the fact that the public elementary schools gave no outlet for their energies, than to innate badness. The work of the school is admirably devised to set the good boy gone wrong on the right track, and to check the vicious tendencies of the bad boy; and, best of all, to give boys who would naturally become criminals an initial start in the direction of honest and industrious manhood. It is the plain duty of the City of New York to extend this work so that the school's influence may be made stronger in these wayward children through longer periods of attendance.

If the work of the Boys' Trade School and the Manhattan Trade School for Girls could be amplified to bring the students into contact with more of the occupations of the community, as the parental school does, their efficiency would be much enhanced.

The sum total of the attendance in the day trade schools and in the evening trade courses does not compare favorably with the thousands of children at work. The problem is being tackled from the wrong end. The boys in energizing trades, whose minds are stimulated, and who

obtain a robust physical development, do not constitute the major problem confronting New York City. But the thousands who go home every evening with fatigued muscles, nerves on edge, and brains either dulled or wearied by the day's work, whose whole being protests against any added burden of mental or physical work, and who feel the need of counteractants, such as rest, pleasure, or excitement—these present themselves to us as the great and grave problem of industrial education in New York City.

When one considers the size and the scope of the problem, as indicated above, and then considers the sum total of the work done as comprehended in the boys' vocational school of several hundred pupils, the girls' vocational school of 360 pupils, the night schools of doubtful value, and the parental school with a few hundred, it will be evident that the problem of industrial education is in fact not being met at all. The very meager attempts so far made to meet the tremendous problem of industrial education confronting the city show that the authorities have not been alive to the needs and necessities of the great mass of working people, and, while this same indictment can be brought against practically every industrial community in the United States, and while it is most unfair to criticize in particular when the defect is general, it is true, nevertheless, that the problem is probably more vital, more complex, and more pressing in New York City than in any other city. In the few experiments under way in the day schools and in the parental school the city has been successful, but the results in proportion to the size of the problem are entirely too meager except in their promise for consideration.

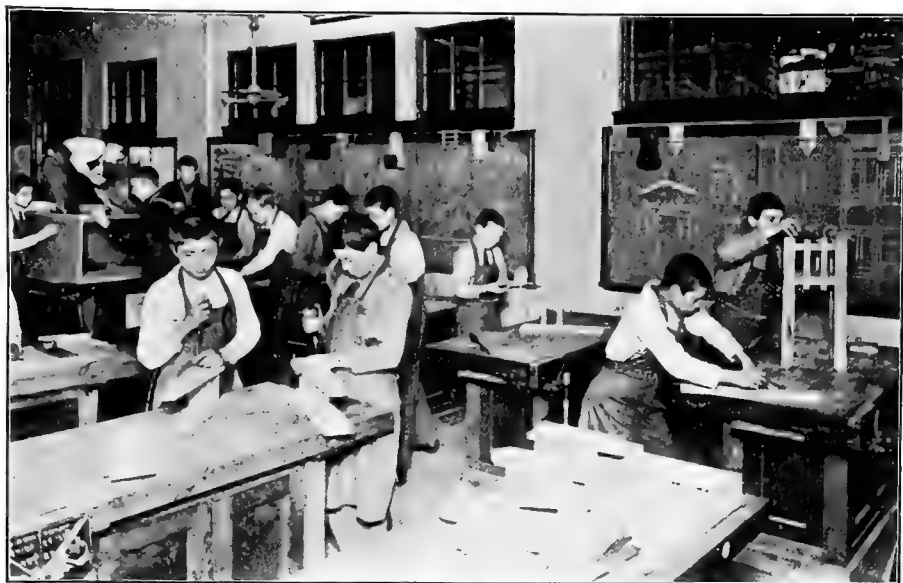
#### (IV)—The Solution

The problem naturally divides into the following major and minor headings:

1. Education prior to gainful employment.
  - a. Elementary training for work generally.
  - b. Specific training for a given occupation.
2. Education accompanying gainful employment.
  - c. The coöperative system.
  - d. The continuation system.

##### 1. Education Prior to Gainful Employment

a. *Elementary Training for Work Generally.*—The differentiated instruction which children *under* fourteen years of age should receive for further schooling and for future usefulness is discussed elsewhere (in Dr. McMurry's report on the course of study). This report deals specifically only with the vocational education of children over fourteen



THE NEW YORK PARENTAL SCHOOL. CARPENTRY SHOP.

Boys learn the use and care of tools, the selection and measurement of lumber, and construct practical examples for use in the institution. The repairing done by this department outside the shop and about the institution amounted in 1912 to more than \$600.



TAILOR SHOP IN NEW YORK PARENTAL SCHOOL.

The boys make their own uniforms, caps, aprons, jumpers and other articles. Electric power machines are used. The value of the work turned out in this department in 1912 was \$1,350.





years of age. Under this heading, therefore, there remains the problem of general prevocational training for children over fourteen years of age.

*Prevocational Schools for Children Over Fourteen Years of Age.*—The particular problem presented here is that of the child who does not intend to finish high school, who is not permitted by law to enter certain skilled trades until the age of 16, and who can afford to go to school only a year or two more, after which he or she must go to work. There is also the type of child who is school-sick because the bookwork of the schools is distasteful and even irksome; work in the store or factory is more attractive. The teacher realizes, too, that further abstract instruction is almost wholly a waste of time and effort; and it is evident also that, since the pupil will go to work within a year or two, some definite vocational training should be given him.

These are the hardest years of boyhood for which to plan. The boy, being a boy, wants to *do* things; he wants to be out of doors; he wants to build; he wants to earn money and assert a partial independence; he craves action; and he hates books. As a rule, he does not know what occupation he wants to go into, for the good reason that he does not know anything about the various occupations. When he goes to work he takes the first job offered, without any knowledge of the future possibilities of the work, and without any intelligent guidance based upon observation of his aptitudes.

These are also the hardest years of girlhood for which to plan. The first impulses to break away from home ties are apparent; the instinct for personal adornment is strong, and money is needed to satisfy it; the desire for a wider social activity is dominant, and school work is prosaic. Then there are the hundreds to whom the factory-age of fourteen necessarily means work. When the girl goes to work it is not, as with the boy, with the definite idea that factory or store work will be her life career. She expects to be married. As a matter of fact, the time spent by most girls in factory work is less than seven years; hence, the industrial education program for girls must be modified by the domestic phases of her later life. Important as this latter phase is, however, it can not be included in this report on industrial education.

*Prevocational Schools.*—By prevocational school is meant an industrial all-day school embracing as wide a range as possible of different types of occupations, with the school work arranged so that pupils can obtain acquaintance with the various occupations, and so that the teachers may observe their predilections and abilities. A high degree of manual dexterity, in any one particular occupation, is not striven for. An effort is made to ascertain the particular type of work for which the pupil is adapted, and to bring his or her skill to the point where a successful beginning of an apprenticeship is possible. These schools should formulate a broad curriculum of doing and thinking for upbuilding physically, energizing mentally, for ascertaining the natural bent of a student, acquainting him with the character of work available in industry, uncover-

ing his limitations and defects of mind and body, and giving opportunity for the discovery of exceptional talents. In the case of the girls, it is imperative that their training be more intensive (except in the purely automatic trades; and there should be no training at all in the prevocational schools for the automatic trades) than that of the boys, because of the moral obligation of society to get the young girls more quickly to a higher wage. The present policy of the Manhattan Trade School for Girls, with sufficient amplification to embrace more occupations for girls, is a safe precedent for New York to follow in the matter of girls' vocational schools.

The writer cannot suggest a better type of prevocational school than the parental school on Long Island. It will be contended, however, that the great variety of work offered in this school could not be duplicated in the congested districts of the city; some of it cannot, but much of it can. It is more important to note, however, that the methods and underlying principles of the parental school can be introduced into prevocational schools in different parts of the city. The same relation of work to study, which has been found so beneficial there, can be duplicated; the same methods of mental and manual coördination can be used; and the same underlying motive of a good broad practical basic training can prevail. Sound vocational guidance would naturally follow in such a scheme. Many boys who now leave school because they are school-sick would be retained for a year or two longer because the school work would appeal to their boyish instincts. The evil of a haphazard selection of an occupation would be largely avoided. The natural desire of a boy to be constructively employed on tangible things would be met, and through the meeting of this desire the efficiency of his mental equipment could be increased.

In the prevocational schools here advocated it would be the function of the directors to search out the most energizing and diversified types of work possible. The work should not be restricted to a few kinds of machines and trades, as most trade school work is, but, as far as possible, should have the breadth and diversity characteristic of the parental school on Long Island. The plan here proposed is merely to meet the boy as he is and not as you think he ought to be; to utilize his natural constructive tendencies for the advancement of his mental, moral, and physical sturdiness, and to start him on the career in which the talents he possesses will make him most efficient.

b. *Specific Training for a Given Trade.*—Trade Schools in the Enervating Occupations.—By trade school is meant a school which in its shops reproduces factory conditions as nearly as possible, and which aims by full time attendance of its pupils to graduate an artisan competent to enter a trade without further apprenticeship, or at most with but a short apprenticeship.

As already stated, there are two major elements of industrial efficiency which the school may consider—manual dexterity and mental develop-



DINNER TIME AT NEW YORK PARENTAL SCHOOL.

The boys take their meals at little tables in a comfortable dining room.



ment. It has been pointed out that in the enervating occupations the continuous performance of certain monotonously repeated operations leads to a stunting of mentality. As a rule, these manual operations are easily learned; the habit can be acquired in a few days or weeks. Speed in executing them is a matter of time and temperament.

This type of work, if long continued, tends ultimately to mental retardation, which is the opposite of the second element—mental development. In the purely automatic types of work, then, the public school must choose between manual dexterity and mental development. It will choose the latter, for to initiate or to increase enervating manual dexterity would not be education. Trade schools for enervating occupations cannot, therefore, be a part of the public school system. As a matter of fact, trade schools for machine-feeding occupations have never been seriously considered by school authorities.

In the Energizing Occupations.—If trade schools in the energizing occupations are set up as the solution, and if they are as efficient as they are claimed to be, their graduates will monopolize the energizing occupations, for no employer would maintain apprentice courses if an adequate supply of skilled workers were available. It follows, then, that only those children who could afford to continue their schooling until they were 16 to 18 years old would get the energizing positions; the less favored ones, whom necessity or parental misguidance drives to work at an early age, would be barred from them. In effect the public school would step over into industry and close the door of the highly skilled trades to all but those who could afford to go to trade schools. The basic idea of democracy is equal opportunity, especially in the struggle for a living; and the public schools could not stand for the more favored financially and against the less favored in the field of industry.

If trade schools are *not* efficient enough to produce skilled workers, the argument for them fails. It may be contended that even the most needy parents would send their children to such schools, and that nearly all the children would, therefore, learn good trades. This would mean a large number of artisans for a small number of jobs, with the consequent ills of overproduction; for it must be remembered that energizing work is decreasing and enervating work increasing.

<sup>1</sup> "Further, there remain the two tests of efficiency and economy. The ability of trade schools to turn out skilled workers has been seriously questioned; this is still an open matter. But any school which attempts to do so must throw out obsolete equipment just as a well managed factory does. Therefore, if a trade school policy is adopted for a large enough number of children to make any appreciable solution, the city would be compelled to make such an initial and continuous expenditure that the imagination is staggered. The advocates of trade instruction in the public school systems sometimes evade these very essential facts by

<sup>1</sup> Fundamental Principles of Industrial Education by Herman Schneider, April 16, 1909.

saying that the more important trades only should be taught. This latter plan at once raises two very important questions:

"1. Who shall decide which are the more important trades, and how shall public support be obtained from all sources for these few trades?"

"2. Are all the children to be taught a few trades, leaving all the other trades neglected, and leaving the predilections of the children out of the question entirely? Or will only a few be trained in the more important trades, and the rest be allowed to shift for themselves as heretofore?"

"Should this be attempted, it would simply be a partial solution, and a very small one at that, of the whole problem of industrial education. If, for instance, we have public schools teaching the plumbing, machinist, woodworking, and molding trades, what would be the solution for all the children entering the numerous other trades?"

"There is, further, the taxpayer to take into consideration. Assume that A and B are citizens in moderate circumstances, and paying about the same amount of taxes. A has a boy and a girl and B has a boy and a girl. A's boy desires to be a machinist, and the public schools will train him; A's girl desires to be a stenographer, and the public schools will probably train her. B's boy wants to be a watch repairer. Has not B the same right to demand that the public schools teach his son to be a watch repairer as A has that they teach his son to be a machinist? Shall the public school system say to B's boy: you must be a machinist, plumber, molder, or woodworker, or go without a trade training? B's girl wants to be a telephone operator. Must she learn her work without any school training?"

"Is it fair for the owner of the machine shop to suggest that the telephone company train its own help, when he demands that the public schools train his help?"

In view of the foregoing it should be evident that an attempt to solve the problem by putting schools for teaching enervating trades in the public school system would not be education in any good sense. To limit trade instruction to all-day schools teaching the energizing and semi-energizing trades would result in unjust discrimination against the poorer children, who could not afford to attend an all-day school, demand a tremendous expenditure of funds, and afford but an incomplete answer to the question. The big problem would still be before us.

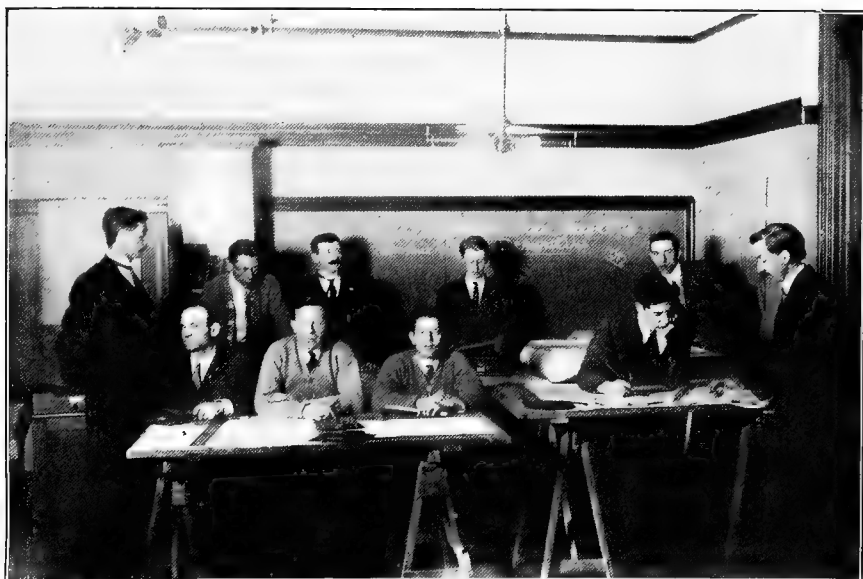
## 2. Education Accompanying Gainful Employment

*The Coöperative System.*—A highly efficient system which would be entirely beyond the resources of the city would be just as futile as an economic scheme of low efficiency. Further, the adoption of any system which might be both efficient and economical, but which would be applicable to only a small percentum of the workers, would be equally futile. In solving the problem it is fair and wise and most efficient to give men-



PUBLIC SCHOOL NO. 1, TOTTEVILLE, STATEN ISLAND.

Terra Cotta Clay Modeling. The artistic side of terra cotta industry, really sculpture, is taught in this evening class to adults who are engaged during the day in this same work in a large terra cotta company in the village.



P. S. NO. 1, TOTTEVILLE, S. I. EVENING CLASS.

Terra Cotta Drawing. Drawing details for terra cotta work.





tal efficiency to the thousands of children already at work. This solution means, therefore, a combination of manual work in the commercial shops with school work. There are two distinct methods of obtaining this combination, namely, the coöperative system and the continuation system.

The coöperative system is based on an agreement between a group of manufacturers and a school system whereby the manufacturers agree to institute and carry on a thorough and comprehensive apprentice course in their particular trades; and in which the school agrees to give both general and specialized instruction to the apprentices. The course of work which the student receives in the shop is scheduled by the shop and must be approved by the school authorities. The school course is devised by the school authorities. In most cases the amount of school instruction is equal to the amount of shop work. The apprentices are usually divided into two sections, which alternate with each other, for example, by weeks, so that when one section is at the shop the other is at school, and both shops and school, therefore, are always full-manned. The apprentices are paid for their work in the shop on the regular apprenticeship scale of their particular trade. The school is under no burden of expense for physical equipment, except the usual laboratory equipment. There are no practice shops in the school to teach manual dexterity.

In order that the work of the school may be definitely coördinated with the work of the shop, a separate set of teachers is sometimes employed. These may be called coördinators. The shop coördinator is a teacher well versed in shop practice. He spends every morning at the school and every afternoon in the shops. His function is to make a direct coördination of the work of the shop with the instruction of the schools.

The coördinators make a careful study of each shop, and devise organization charts showing the path which a student can most profitably follow through the shop. In addition to the shop chart, a chart is made for every individual student which indicates how closely this path is followed, and why there are deviations, if any. These charts are the result of closely observed experiment on the part of the schools and the shops, and are worked out by conferences between shop coördinators and shop superintendents.

It has already been demonstrated in this country by actual experiment (at Fitchburg, Mass.) that the average young man can acquire an energizing trade and do nearly as much school work as that required in a high-school course by four years of coördinated half-time work in each. It has also been demonstrated that the alternation by weeks of student-apprentices causes no annoyance or inconvenience to the school or to the shop. Experience to the writer's knowledge has covered work in drafting rooms, chemical shops and laboratories, machine shops, pattern shops, building trades, boiler shops, outdoor work of railroads, track, signal, bridges; courses are now being inaugurated in cloth fabric

factories, grocery stores, and a variety of other occupations. Under this system, the student is assured a complete and thorough apprenticeship, since it is the function of the school to see that breadth and thoroughness of training are maintained in the commercial shop work. No girl or boy may be exploited by overzealous foremen, as the visits of coördinators prevent this. Alternating periods and alternating sections are, of course, not necessary in this system, since this is not the distinguishing feature of the plan. The essential factor is the agreement on a broad and thorough apprenticeship, with coördinated schooling, carefully checked and maintained in actual operation by the school authorities. The various coöperative plans (at Fitchburg, Mass., Solvay, N. Y., Lewis Institute, Chicago) have demonstrated that the course is commercially profitable to the manufacturer and to the student, and economical for the school.

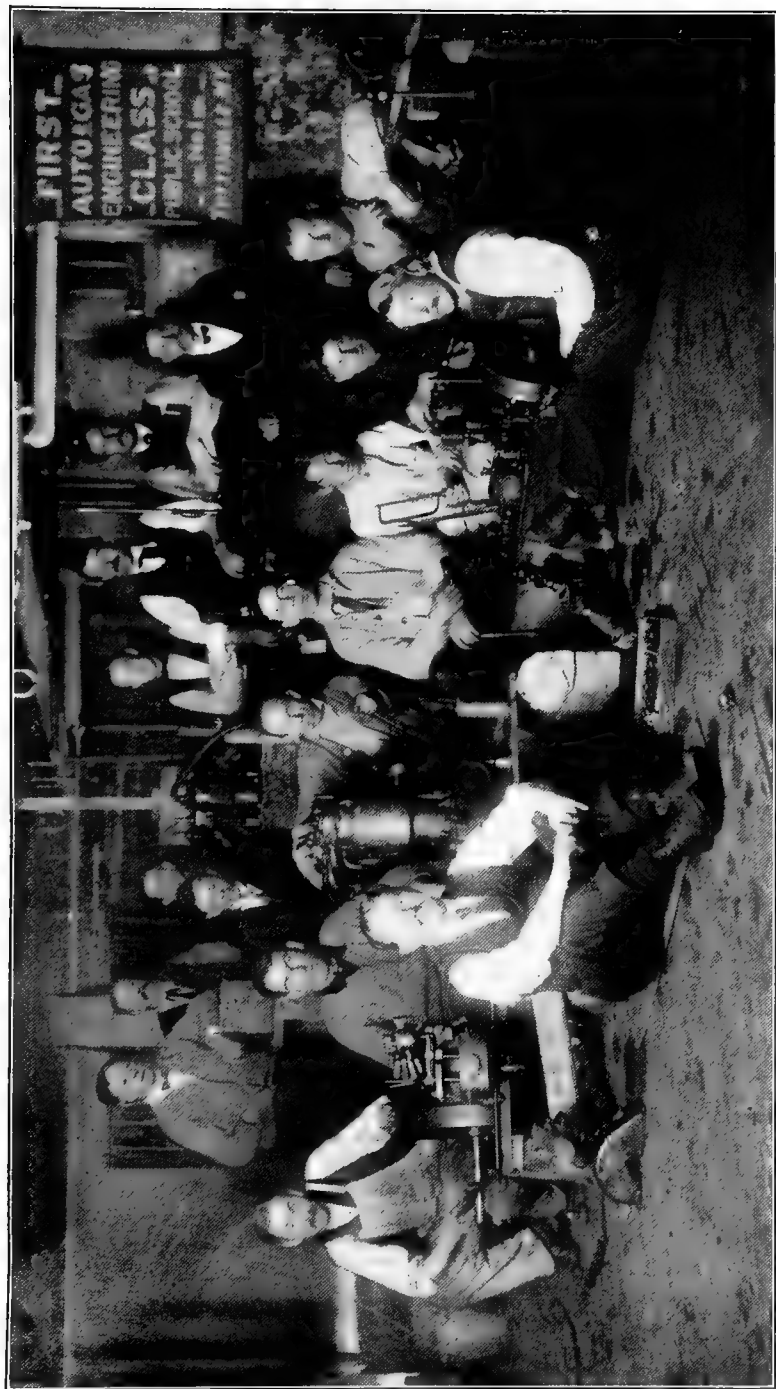
*The Continuation System.*—Under the continuation system, the employer releases his employees of school age for a period of time (*e. g.*, one-half day or a whole day) per week to attend the public schools for definite mental instruction. The instruction given at the school is entirely under the control of the school authorities; but the school authorities have no control whatever over the shop work. The manufacturer does not agree upon any definite apprenticeship course, his only obligation being to send the workers to school for a definite number of hours per week, with or without pay. This type of school is in extensive operation in Germany, and a few have been started in this country. It has been shown in America by actual experiment (in Cincinnati) that a worker in the energizing trades who goes to school for one-half day per week, on pay, is a better producer per week than if he does not go.

Specific details of these systems will now be cited.

*The Coöperative Course in Detail.*—The coöperative system has been applied so far only to the more energizing trades, which have fairly definite plans and periods of apprenticeship, as, for example, the machinist trade, molder trade, pattern-maker trade, plumber trade. This is because the coöperative system contemplates a deliberate life choice of a trade on the part of the youth; and no boy or girl deliberately selects an automatic machine-tending job as a life job. It is selected haphazard, usually from necessity; nearly always the immediate cash return is the only consideration. Coöperative plans have been devised for the more automatic trades, where these are the only trades available and where deliberate selection of a more energizing trade is out of the question; but these are just being put into operation, and hence there are no data to show whether or not they are better adapted to these trades than the continuation scheme.

Coöperative courses vary in detail to meet local and trade conditions. Specific details of coöperative courses follow:

The duration of the course is determined by the length of time required for a thorough apprenticeship plus the necessary coördinated



P. S. 1, TOTTENVILLE EVENING SCHOOL, STATEN ISLAND.

Gas Engine class.—\$1800 worth of material was donated to this class by the citizens of Tottenville.



schooling—usually four years. The first year is sometimes spent wholly in school and the next three years in alternation weekly between shop and school. In some cases, the full four years are spent in weekly alternation.

The manufacturers take the student-apprentices in pairs, so that they have one of the pair always at work, and likewise the school is provided with one of the pair. Each Saturday morning the boy who has been at school that week goes to the shop in order to get a knowledge of the job on which his alternate is working, so that he will be ready to take it up Monday morning, when the shop boy goes to school for a week.

*Shop Work.*—Shop work in the commercial shop consists of instruction in all the operations necessary to the particular trade.

The apprentices receive pay for the weeks they are at work at the prevailing apprentice rates.

A candidate is usually given a trial period of one or two months preceding the opening of school, and if he likes the work and shows aptitude for the trade he takes the course; otherwise he drops out, and, if he chooses, takes up some other trade. Thus the boy is given an opportunity to find himself. During this probationary period the coördinators observe the apprentices at their work, and talk to their foremen and fellow-workmen to ascertain their aptitudes.

Objection is frequently made on the part of shop owners to the co-operative system on the assumption that alternating sets of students would cause confusion and inconvenience to the shop organization. Experience, covering a period of four years—at Fitchburg, Mass.; Solvay, N. Y.; and Chicago, Ill.—shows that this assumption is false. Emphasis is placed on this detail because it is the principal objection raised by shop superintendents when the coöperative system is proposed. The owners of shops using the coöperative system are a unit in stating that, while trouble of this kind was anticipated, it has never developed. Shop managers have also opposed the plan for the reason that the withdrawal of a student-apprentice would leave the machine idle every other week. The actual operation of this system shows that there can never be more than one odd man in the shop, since if there are two odd men they can be combined into a new pair. Actual experience has taught that there is no difficulty in taking an odd boy from one shop and pairing him with an odd boy in another shop. In a few weeks they are alternating as smoothly as the original pair. If two boys are at different stages of development in their shop work, the smooth adjustment of their new combination is brought about through intensive instruction, by the co-ordinator, of the less advanced one.

The layout of the apprenticeship courses in the shop contemplates an advancement from the simple to the more complex work at the various machines and throughout the necessary departments to make a well-rounded mechanic. From the point of view of the shop, any particular kind of work has only one value, namely, the practical value of material production. From the point of view of the school, there is the added

value of the mentally stimulating character of the work. For example, repetition of work in turning out certain pieces on a lathe increases the manual dexterity of an operator, and hence his output. This makes for increased production, and hence the longer the period of time the student is on a given job the greater his output. A shop superintendent, looking at an apprentice course solely from the point of view of production, would emphasize the necessity of long periods of time on repeated processes. From the point of view of the school, however, the long period of time on such processes would destroy, to a certain extent, the educational value of the apprentice course. The school would contend that a great variety of work on the lathe, with less immediate production, would, in the long run, insure a better mechanic; not only because his mental stimulation would be greater, but because he would be competent to perform a greater variety of tasks. Further, when the work is more diversified, the coördinator obtains many more practical problems, illustrating mathematics and science in the school. It will be evident, then, that in many cases the shop course will be a compromise. As a matter of actual experience in coöperative courses, it has been found that, after a year or two of operation, the shops are entirely willing to accept a plan of diversified work, as suggested by the coördinator, largely because the mental results of the greater variety of operations are clearly evident during the apprenticeship period; and nearly every shop superintendent knows that the ability to think, on the part of the mechanic, is as fundamentally essential as his immediate ability to do.

The arrangement of shop work in the more automatic trades is a much more difficult task. Skill in a machine-feeding shop is almost entirely a matter of manual dexterity. The shoe manufacturer, for example, who has subdivided the operations of his factory into over 50 distinct kinds of work, contends that knowledge of all of the operations of a shoe factory is not necessary for the worker doing any particular piece of work. He points out that the skill in one process can be obtained in a short time; that knowledge of previous or subsequent processes in the making of a shoe is not essential to the quantity of production in any particular part of shoe making; that most of his workers are usually girls to whom the immediate cash return is more important than a thorough knowledge of the trade; and that the seasonal, the competitive, and the manually simple conditions in his industry make impossible and unnecessary a scheme of apprenticeship similar to that in carpentry, plumbing, or book-binding. It is probably true that the immediate production of the shop would not be increased, and might be decreased by a broad apprenticeship system, similar to that devised for the energizing trades mentioned, since in his trade manual dexterity is the essential thing. There are no experimental data by which to confute this argument. The theoretical contention that a broad knowledge of shoe making, on the part of, say, a laster, would increase the laster's interest in his work and make for stability of employment; lead to the discovery of

better equipped and more intelligent foremen and forewomen; tend to counteract the lethargizing effects of the work; and, by shifts from one type of work to another, decrease the physically debilitating effects of nervous tension, monotony, and automaticity, can only be determined by experiment. The value to industry of a high general intelligence and sounder moral tone, which would come through the operation of such courses, must be counted in favor of a coöperative system. Unfortunately the immediate cash value of these conditions to an employer is not apparent on his books, and hence they are frequently considered by him as social questions with which industry has nothing to do.

It will be evident, then, that the introduction of coöperative courses into the more automatic trades will not be so feasible as in the more energizing trades. When, however, industry counts as an asset the broader intelligence and greater stability so necessary to a self-governing industrial community, and turns to the public schools for assistance, the actual planning of a shop scheme for automatic workers will not be a matter of great difficulty.

*School Work.*—Since the student reports at school every other week, a repetition of school work is necessary. What was taught to "section one" last week must be taught to "section two" this week. This does not add to the expense of instruction, since in all public school work the classes are divided into sections, and it is no more expensive to teach one section Monday of last week at 9.30 and another on Monday of this week than to teach two sections at 9.30 every week. More intensive work is possible for the week the student is at school because of his alternation of mental and physical work. Four years of experience with the coöperative system at different schools have established the remarkable fact that nearly as much work can be done in a year's time under the coöperative system as in a year's time under the regular system. It must be remembered, however, that this experience has been gained by coöperation with energizing trades. It cannot be assumed that similar conditions would prevail in coöperation with enervating trades.

School curricula and methods of instruction will always be a subject of controversy, and the application of present school courses to coöperative classes will depend upon how the present classes are taught; if, for example, the science and mathematics courses are concretely coördinated with tangible things, they will need little or no revision. If the nonscientific subjects are themselves coördinated and made vital, no essential changes will be necessary in them. The only difference will be in the added value of more direct application of the sciences and mathematics to the worker's daily task, and the closer connection of the nonscientific subjects—such as history, civics, and geography—to modern industrial activity.

Practical exemplifications of theory are brought to the school from the shop by the coördinator and by the apprentices themselves; and in a short time the regular teachers are sufficiently interested to get into

closer touch with the industrial and other broader community activities—to be coördinators to a degree also. For example, if a coöperative course for silk workers were in operation, the students' attention would be called to the fact that different patterns and qualities of silk are used in different countries, and even in different parts of the same country; that the pattern of silk which would sell in Brazil would not sell in Iowa. The student would be shown that this was due to a difference in the life, the customs, the tastes of the people, and that these in turn were a result of historical development and geographical location. The relation of silk-worm culture in different countries to physiography and geography would be used to further vitalize these subjects. A course in chemistry, for example, in the case of a silk worker, would emphasize the connection of chemistry to industry through simple dye experiments, while in the case of the machinist apprentice simple metal analyses would be used. This would not mean the abridgment of a course, but the general interest in chemistry would be stimulated through specific applications to the occupations of the students. The connection of instruction in English with industry, through the necessity of writing good business letters, making accurate shop reports, describing shop processes, is too evident for elaboration.

In certain coöperative courses, however, the time allotted for school work would not permit much more than strictly technical courses. In a department store, for example, the clerks are not busy until 10 o'clock in the morning. A store can get along easily with one-half its clerks from 8 to 10 o'clock. The force is divided into two sections, one-half of whom receives instruction this week from 8 to 10 o'clock, while the other section is working; the following week the sections are changed about. In this particular instance, the students do not go to the public schools; the teachers go to the store. It is evident that it is easier to transport 20 teachers than to transport a large number of student-clerks. A number of rooms in the store, such as carpet rooms and lace rooms, are set aside during these 2 hours for the class work, the chairs being removed at 10 o'clock, and sufficient space being reserved for any business which may be necessary up to that time.

It is contended by department store owners that salesmen should know the psychology of salesmanship, and have a fairly expert knowledge of the things they are selling. They should receive, besides, a certain amount of general education. The salesmanship and the more general subjects are taught by selected teachers employed by the public schools. In order to teach the practical end, the following method has been adopted: Consider, for instance, the shoe department. If one pair of shoes costs \$1.85 and another pair costs \$1.95, the salesman should know where the difference of 10 cents value lies. Let us assume that this particular department store buys shoes from a firm in Brockton, Massachusetts. When it makes its next contract for shoes, it will insist that the firm selling the shoes send an expert demonstrator to its store to explain in detail all





DRESSMAKING CLASS IN EVENING PUBLIC SCHOOL 18, BROOKLYN.



the different successive operations in shoe making and all the different elements which make differences in cost. The tanning firm from which the shoe manufacturer buys its leather will be required to send to the store an expert who will exemplify practically to the students the different grades of leather in a hide, methods of preparation, and why one kind of leather is used in one part of a shoe, and another in some other part of a shoe. It has been found that the shoe manufacturers will very gladly enter into any scheme of this sort. He would, in fact, be a very short-sighted manufacturer who would not. This same general idea is followed in all of the other departments, such as jewelry, linen, silk, and furniture.

*The Continuation School in Detail.*—The continuation system is applicable to all trades, both energizing and enervating. The whole problem in the continuation school is the careful planning of the mental instruction so that it will best supplement the work done in the commercial shop. It will be evident that this mental instruction must vary widely for different trades, and must depend primarily upon how energizing or enervating the shop work may be. As the work approaches the 100 per cent. point on the scale of energizing and enervating work given in the forepart of this paper, the school work involves more of the science underlying the trade. For example, the carpenter apprentice will be taught practical mathematics, mechanics, simple stresses, reading of blue prints, the proper use and care of tools, etc. As the work of another occupation approaches the zero point, and becomes more enervating, the supplementary school instruction would not be the same as that in the energizing job; for, in many cases, this would be an added burden to an overstrained organism, rather than a relief. In certain high-speed repetitive processes the instruction would be planned solely to counteract the lethargizing tendencies of the work itself. Even in the same trade the instruction would vary. For example, in a factory making leather articles, one worker may be merely an automatic machine operator, while another may be on highly skilled, artistic, and energizing work. In a machine shop, the work of a punch-press operator is monotonous and lethargizing, while the work of a boy in the toolroom is highly energizing. The course of instruction given to the automatic worker would be planned solely for the stimulation of his active thinking centers. On the other hand, the skilled leather worker or toolroom apprentice would have a school course devised to teach him the science underlying his work, and to give him industrial intelligence broadly. In the case of the automatic workers, there would probably be no increase in output at first, whereas, in the case of the skilled worker, the increase in production and the decrease in losses would be apparent.

The continuation course for the toolroom apprentice would include shop mathematics, the elements of mechanism, and writing and spelling, as they are found to be necessary; history and geography taught broadly by their connection with definite industrial conditions existing in the

trade of the student; and, finally, courses in hygiene and civics, having to do primarily with the intimate details of city life in connection with the apprentice's daily health, transportation, pleasures, rights, and privileges.

The school work of the automatic worker presents a more difficult problem. It seems to be a well-established fact of observation that these workers have a pronounced natural craving for things that are lively and immediately interesting. They patronize the moving-picture show, the amusement parks, the dance halls; they want excitement. This is strictly in accordance with what scientific investigation would lead us to expect. The repression of the day's work prompts nature to go on the defensive, and hence the demand for something which is not dull, prosaic, or according to a fixed schedule as the daily task is, and as formal school work would be. To the unthinking, school courses which would take advantage of the opportunities offered by moving pictures; which would be especially devised to have life and color; which would counteract the dull monochrome of monotonous work; and which would be so informally conducted as not to give the feeling of compulsion, would not be education and hence an unnecessary waste of public money. Nevertheless, the school authorities are confronted with the fact that they must institute such courses, or that certain types of workers will get the same stimulation by more vicious means. The school authorities must face the fact that the usual methods of instruction will fail dismally for workers whose daily work is repressive, monotonous, and automatic, and that they must devise plans which will meet the situation which is now being met largely in a commercial way for private gain. Fundamentally the school must make the same appeal to the same desires as the shows and the parks do. This statement will probably be read with abhorrence by many school men; nevertheless, unless the situation is met in this way it will not be met at all, so far as the schools are concerned, and, since the object of education is the fostering and maintenance of good citizenship, the public schools have, in the case of the enervated worker, a very important problem. They have to take this worker as they find him with his intense and very human desire for self-expression after daily repression, and, whether they want to or not, they must take their cue from those who are meeting this desire in a commercial way. The vicious features incident to satisfying this craving can be eliminated, and the work so organized that it will be mentally stimulating, physically up-building, and morally beyond criticism.

The statement that the continuation school courses for the girl at the zero point must be the most brilliant and healthful pleasure courses possible may excite ridicule, but if the critic will attempt to formulate some other scheme for, say, the laundry worker mentioned in the scale of work, which will not be an attractive and pleasurable course, he will find the one thing necessary for the success of the plan, namely, the presence and interest of the worker, absent.

There is a type of course which may be partly continuation and partly coöperative. These courses are in operation in seasonal occupations. For example, in the building trades in Chicago the apprentices work full time during the spring, summer, and fall; during the winter months, when building work is slack—by agreement between the school and the employers—they attend school for certain definite instruction. These courses may be usually classed as coöperative, inasmuch as the apprenticeship during the nine open months is agreed upon, and, during the three winter months of school, the theory of the work is taught.

Particular emphasis is placed upon the fact that no hard and fast rule for the operation, in detail, of the coöperative and continuation courses can be made. There is in each case a most efficient plan, alike for the employer and the employee, and each type of occupation must be studied to ascertain the proper relative amounts of shop and school work, time of attendance, curriculum, and methods of instruction.

#### (V)—How to Inaugurate Continuation and Coöperative Schools

Continuation courses may be instituted in two ways: First, by compelling the employer to send his working people, between certain age limits, to the schools for a certain percentage of the working hours; and, secondly, by inducing the manufacturer, by voluntary action, to consent to coöperation with the public schools. Since the coöperative system involves an agreement on the part of the employer to maintain a thorough apprentice system, it can hardly be made compulsory by legal enactment unless laws governing apprenticeship are also enacted.

Under the first plan the establishment of the continuation school may be made mandatory by legislative action, both for the employer and for the public school. In Wisconsin (see Appendix III), for example, the employer is required to send all his employees, between the ages of 14 and 16, for five hours of instruction per week during working hours. The law further limits the number of working hours per week for these children to 48, including the five hours for school. As a result of this law, some children were discharged, either to be idle or to go back to school for full-time instruction, until the law permits them to work full time in the shops. The Ohio law (see Appendix IV) makes it obligatory on the part of the manufacturer to send his employees between certain ages for a certain amount of instruction to such continuation schools as the public school authorities may deem it advisable to inaugurate. This plan permits the school to make a study of industrial conditions and to govern the solution accordingly. Under either compulsory system the manufacturer has no option in the matter of sending his employees between certain ages to the public schools.

The second system, in which action by the manufacturers is voluntary, is as a rule harder to put into operation. The manufacturer must be convinced that 4 or 8 hours per week in the schoolroom will so in-

crease the efficiency of the young worker that production will not decrease; at least that it will not decrease sufficiently to make it a serious element in his competition with another employer who does not permit his employees to attend school. In some industries, a competitor would suffer for a time and possibly indefinitely by the continuation system if he adopted it and his competitor did not. This is especially true of an industry such as the shoe industry, where a large number of juveniles are employed. In the voluntary schools, so far inaugurated in this country, practically all of the employers in a given industry have agreed mutually to send their juvenile workers to school for a certain period of time; but they are still at a disadvantage in competing with outside employers whose workers work full time. In the more highly skilled trades, such as the machinist trade and the pattern-maker trade, it has been shown (in Cincinnati) that the production per week is not lessened by the attendance at school. In the Cincinnati plan, the employers pay the apprentices for the time at school just as if they were at their machines.

In the voluntary system, the first problem confronting the school men desirous of establishing continuation or coöperative courses is to get the interest of the manufacturers in each particular trade. In nearly every line of industry the employers usually have an organization with a secretary and a central office. Through this secretary the manufacturers are approached by letter, by individual visits, and by meetings, to obtain their consent to some form of industrial education for their employees. In nearly every case it will be found that there are enough employers who appreciate sufficiently the seriousness of modern industrial conditions to give the school men a good-sized class. To begin continuation courses requires a considerable amount of study in order to determine the time of day and time of week that the children are to be taught, the subject matter to be given, and the method of its presentation; and there is always the difficult matter of finding the proper teachers. This latter difficulty has been used as an argument against both the coöperative and the continuation systems. It can be used, however, with equal force against the day trade school, for, as a matter of fact, the trade school teacher ought to be more efficient than a continuation school teacher, since he has both theory and practice to teach, while the continuation school teacher has only the theory to teach.

It will be seen then that the formation of coöperative and continuation schools is a slow process, if efficiency is to obtain; and that in many cases legal enactment is not necessary for their inauguration. Of course, there may be localities in which conditions are such that no manufacturer would coöperate with the schools voluntarily, or there may be certain groups of manufacturers in certain trades, for example, in the seasonal trades, none of whom would consent to the plan. Under these conditions, the compulsory system is necessary.

The second broad question to settle is as to the type of school, whether

coöperative or continuation. From a manufacturer's viewpoint, the coöperative scheme offers the advantage of keeping his machine full-manned all the time. Actual experience has demonstrated, as heretofore stated, that there is no conflict, confusion, or commercial loss arising from the working in alternate weeks of two groups of workers; but, again, the coöperative system contemplates a broad and thorough apprenticeship in the store, shop, or office. Manufacturers in favor of specialization are sometimes opposed to this phase of the system. Then, again, the number of children who can afford to go to school and to shop on the half-time plan is limited; so that, aside from other considerations, both plans will have to be inaugurated. Generally speaking, it will be found that the coöperative courses will be more easily organized in the energizing trades. It will be argued that the coöperative courses, therefore, are subject to the same fundamental objection that applies to the full-time trade school, and that the more favored will therefore possess the energizing trades. A little analysis will show this to be fallacious. In the first place, a coöperative system is applicable, with a well-arranged apprenticeship, to the enervating trades, and, in the second place, if a worker cannot afford to enter the coöperative course the apprenticeship in the commercial shop is open to him just the same; and, further, at a later date, when his wages are higher, the coöperative or continuation courses are always available. The continuation scheme will be more largely used than the coöperative system because the bread-and-butter necessities will make it the only feasible plan for a large number. The coöperative scheme presents the better combination of a good apprenticeship, coördinated instruction, and a more advanced mental development.

From the point of view of the school, the coöperative course is much more difficult of operation than the continuation course. It requires a careful analysis of shop work in order to perfect a proper arrangement of the apprentice course, necessitates a carefully built internal organization for the coördination of theory and practice, and demands constant care and attention to insure its smooth operation. Unlike the usual public school course, it cannot be started in September and allowed to run more or less by its own momentum until June. The executive work of a coöperative course requires daily attention to a variety of details, just as any business does. But it has the unquestioned advantage of placing a swift and sure check on the efficiency of the instruction given in the school, and inevitably it leads to a comprehensive revision of many of the science and mathematics courses as they are now taught. In fact, this check on the efficiency of school instruction is one of the most valuable features of the coöperative course from the school man's point of view.

Briefly then, in choosing between coöperative and continuation courses the decision will largely be determined by the relative poverty of a community, the attitude of the manufacturers (assuming no legal enactment) to the inauguration of thorough apprenticeships, and the willingness of

the schools to undertake a varied and more exacting system of instruction.

One evening, about a year prior to the writing of this, the writer had two addresses to make in New York City. The first was before a body of school teachers and the second before a group of manufacturers. Prior to going on the platform at the school teachers' meeting he was requested not to make an attack upon trade schools; that is, schools which attempt to teach trades by full-time attendance at school. He was told that, while it was generally conceded that the coöperative and continuation schools are the most efficient, they are not possible in New York City because the employers would not agree to their adoption, and that hence only the trade school was possible for New York City. At the second meeting, after an explanation of the coöperative and continuation systems, there was a lively discussion in which one manufacturer after another expressed a desire for these courses—but said that they were impossible because of the attitude of the school people. The attitude of the schools was assumed to be one of antagonism toward industry and a lack of concern toward industrial efficiency.

It has been conclusively demonstrated that the school and shop can work together if the one common ground will be the mutually safe ground of the mental, physical, and the moral advancement of those who work. This will seem to the superficial critic a too ideal basis on which to do business in this day and generation. He will probably agree that it is a nice scheme to have in mind, but an impossible one upon which to operate. There is but one satisfactory answer to this, namely, that the thing is being done and is being done satisfactorily.

## VI—Recommendations

We recommend—

1. That day continuation schools be inaugurated for those children who are forced to go to work when the law permits them to do so. The occupations into which the children go should be carefully studied so that the curricula of these continuation schools may be wisely devised. It must be observed that the school work of the enervating occupations must differ from the school work of the energizing occupations in that it must counteract the influence of the work rather than supplement it. If it be found that employers are opposed to this plan, we recommend that a compulsory continuation school law be submitted to the General Assembly of the State of New York. This law should require the employer to send children to school not less than four hours per week during the day time wherever the public school system inaugurates such schools. Because of the size of the task involved, the law should not make it mandatory for the schools to establish continuation courses all at once; but when they are established the law should make it mandatory for the manufacturers to send the children to them for day instruction.



2. That coöperative courses, to a limited extent, be inaugurated. Coöperative courses contemplate an agreement between the public school authorities and commercial shops, whereby the shop authorities agree to establish thorough, old-fashioned apprenticeship courses, subject to the approval of the public school authorities; the public school agrees to inaugurate special courses intended to give the apprentice in the commercial shop a well-rounded mental training. As a rule, students in the coöperative courses should spend alternate periods of time (for example, alternate weeks) in the schools and in the commercial shops. The student-apprentices in the coöperative course are divided into two alternating sections, one being at the school while the other is at the shop; in this way both school and shop are always full-manned.

We are opposed to the introduction of the trade school system for industrial education. By trade school is meant a school which in its shops reproduces factory conditions as nearly as possible, and which attempts, by full-time attendance of the pupil, to graduate an artisan competent to enter a trade without an apprenticeship, or at most with a very short apprenticeship. If this type of school were put into operation it is obvious that it could not be applied to enervating occupations. If it were applied only to energizing occupations, and if enough schools were built to supply the energizing trades with artisans, the result would be that the less favored children financially would be compelled to take the enervating occupations; for the manufacturer would discontinue his apprenticeship course if the public schools supplied him with artisans. In effect, then, the public school would be going over into the field of industry and closing the door of the energizing occupations to the poorer children, who could not afford to continue in the trade school until they were seventeen or eighteen years old. In addition to this, the trade school would solve only a very small part of the problem, because it would reach only a relatively small number of children and serve only a limited number of occupations. Carried to its logical conclusion, it would oversupply the market in the skilled trades.

3. That the curricula of the Boys' Vocational School and of the Girls' Vocational School be broadened to embrace a larger number of *types* of occupations. These schools are really prevocational schools. We further recommend the inauguration of prevocational schools patterned after the Boys' Vocational School and the Girls' Vocational School after their curricula have been amplified.

4. That the Parental School (Long Island) be enlarged so that children sent there may remain a greater length of time. The school is now so crowded that the benefits obtainable for the children are restricted by the time each child is allowed to remain.

5. That a comprehensive survey be made showing the number of girls and boys employed in different occupations; whether the work is energizing or enervating; whether it is juvenile work only, or whether it offers good permanent employment; whether or not it is seasonal;

together with the usual vocational statistics on wages, home conditions, reasons for leaving school, etc. This survey should include an analysis to ascertain when the workers could best be released from their work to attend school.

6. That a compulsory education law be enacted for juvenile workers similar to the Ohio law, which makes the introduction of day continuation schools optional with the school authorities, and which makes attendance mandatory when the schools are put into operation.

7. That the elementary night schools, operating under the Compulsory Education laws, be abolished.

8. That a propaganda be undertaken through neutral sources to awaken all the elements of the city to the serious educational problem growing out of the city's work. We do not make specific recommendations on *how* the school and the shop shall be brought into coöperation. We do recommend, however, that a system of advisory boards, consisting of representatives of employers and employees in the various occupations, be inaugurated to assist in bringing them together.

## Appendix I

### New York City

Occupations of Children Between 14 and 18 Years of Age in Division 1, Comprising Districts 1, 2, 3, 4, 5, 6, 7, and 9, Being That Portion of the Borough of Manhattan Lying South of Fourteenth Street, Arranged in Order of Numerical Importance.

#### OCCUPATIONS HAVING MORE THAN 100 WORKERS

Occupation.	Boys	Girls	Total
Errand Boys and Girls .....	2,733	358	3,091
Housework .....	....	1,812	1,812
Clerks .....	1,367	378	1,745
Machine Operators .....	385	1,050	1,435
Office Boys and Girls .....	857	271	1,128
Salesmen and Saleswomen .....	416	456	872
Packers and Wrappers .....	306	554	860
Helpers .....	557	215	772
Not Known .....	481	277	758
Feather and Feather Dusters Workers .....	25	685	710
Messengers .....	663	46	709
Workers on Shirtwaists and Shirts .....	49	643	692
Bookkeepers .....	201	409	610
Stock-boys and Girls .....	310	298	608
Outer Clothing Workers .....	117	427	544
Tailors, Tailoresses, etc. ....	375	139	514
Seamstresses .....	....	509	509
Stenographers and Typewriters .....	59	367	426
Paper Boxmakers .....	134	282	416
Hairdressers and Makers of Hair Goods .....	57	330	387
Millinery .....	8	346	354
Wagon Boys .....	340	....	340

# VOCATIONAL (INDUSTRIAL) SCHOOLS

805

Occupation.	Boys	Girls	Total
Neckwear .....	33	286	319
Artificial Flowers .....	27	275	302
Dressmakers .....	....	299	299
Printers .....	235	....	235
Embroidery Workers .....	27	201	228
Hat and Cap Workers .....	63	108	171
Underwear Workers .....	9	162	171
Confectioners .....	41	127	168
Newsboys and Newsgirls .....	163	5	168
Drivers .....	162	....	162
Bookbinders .....	52	99	151
Servants and Waiters .....	33	100	133
Leather Workers .....	78	46	124
Vendors .....	114	6	120
Buttonmakers .....	56	54	110
Folders .....	12	96	108
Cleaners and Sweepers .....	85	22	107
Bottlers .....	35	70	105
Jewelers and Dippers .....	90	14	104
Boxmakers .....	43	60	103
Furworkers .....	59	42	101
	10,857	11,924	22,781

## OCCUPATIONS HAVING LESS THAN 100 WORKERS

Occupation.	Boys	Girls	Total
Cashiers .....	19	76	95
Paperhangers, Plasterers, Plumbers .....	86	....	86
Telephone Operators .....	20	53	73
Electricians .....	68	....	68
Machinists .....	64	....	64
Tobacco and Cigar Makers .....	23	38	61
Corsetmakers .....	4	56	60
Card and Picture Mounters .....	17	41	58
Suspender and Garter Makers .....	27	31	58
Pressmen and Lithographers .....	56	....	56
Barbers .....	55	....	55
Outdoor Workers (Unskilled) .....	48	6	54
Grocery Clerks .....	38	16	54
Belt Makers .....	23	30	53
Musicians .....	30	20	50
Umbrellas .....	26	23	49
Combs—Ornaments .....	24	25	49
Bootblacks .....	49	....	49
Dyers and Cleaners .....	49	....	49
Hats, Bonnets and Frames .....	13	28	41
Masons, Painters and Decorators .....	40	....	40
Trunks .....	27	11	38
Braiders, Tassel and Fringe Workers .....	16	22	38
Brass Workers .....	30	4	34
Glove Makers .....	3	31	34
Mechanics .....	33	....	33
Carpenters .....	32	....	32
Bellboys and Hallboys .....	32	....	32
Bakers .....	25	4	29
Agents and Collectors .....	22	3	25
Corset Examiners .....	3	22	25
Elevator Boys .....	25	....	25
Laundresses and Laundry Workers .....	6	19	25

Occupation	Boys	Girls	Total
Butchers .....	23	....	23
Pipemakers and Polishers .....	19	4	23
Instructors .....	6	15	21
Workers on Novelties .....	5	15	20
Telegraph Operators .....	11	9	20
	<hr/> 1,058	<hr/> 634	<hr/> 1,692

## OCCUPATIONS HAVING LESS THAN 20 WORKERS

Occupation	Boys	Girls	Total
Nurse and Nurse Girls .....	....	18	18
Lamp Shades .....	13	4	17
Gold and Silver Workers .....	16	1	17
Engravers .....	17	....	17
Government Employees .....	15	1	16
Amusement Performers .....	8	6	14
Iron Workers .....	12	....	12
Window Dressers .....	12	....	12
Wood Polishers .....	11	1	12
Liquors, etc. ....	11	....	11
Compositors .....	11	....	11
Artists .....	6	4	10
Rubber Workers .....	8	1	9
Upholsterers and Mattress Makers .....	7	2	9
Sorters .....	2	6	8
Solderers .....	8	....	8
Hostlers .....	6	2	8
Beadworkers .....	....	8	8
Blacksmiths .....	7	....	7
Designers .....	2	5	7
Stonecutters .....	6	....	6
Musical Instruments .....	6	....	6
Dentists .....	6	....	6
Coppersmiths .....	6	....	6
Draftsmen .....	5	....	5
Models .....	2	3	5
Photographers .....	4	....	4
Librarians .....	4	....	4
Buyers .....	2	2	4
Embossers .....	2	1	3
Manicurists .....	....	3	3
Sawyers .....	3	....	3
Ushers .....	3	....	3
Conductors .....	1	....	1
Lamplighters .....	1	....	1
Weavers .....	1	....	1
	<hr/> 223	<hr/> 69	<hr/> 292

## SUMMARY

Occupations having more than 100 .....	10,857	11,924	22,781
Occupations having less than 100 .....	1,058	634	1,692
Occupations having less than 20 .....	<hr/> 223	<hr/> 69	<hr/> 292
Total .....			24,765

## Appendix II

(From Appendix E, Report on the operation of the Compulsory Education Law, to Superintendent William H. Maxwell, by Edward B. Shallow, Associate Superintendent, July 11, 1910.)

### New York Parental School

The New York Parental School was opened for the reception of pupils on May 19, 1909. Therefore, more than one full year has elapsed since we began the various activities of this school.

No better demonstration of the wisdom of establishing the school need be given than is presented in the character of the classroom work, and in the mechanical and agricultural work performed by the boys.

The schoolroom work is organized on the departmental plan. Each teacher is a specialist in his or her line. Boys who were truants or incorrigibles largely because of a dislike for schoolroom routine develop a remarkable liking for study and recitation. Principal Todd says: "Many of the boys not only ask if they may go to school all day, and work outside during their recreation periods, but frequently and voluntarily ask to be put back a grade when they find that the grade they are in is too difficult. One of our boys while in the Jamaica Hospital asked to have his history and arithmetic sent to him so that he might study and save time while away from school."

Boys in all grades from 1A to 4B, inclusive, attend school in the morning, and all those in grades 5A to 7B, inclusive, attend in the afternoon. The time not spent in school is devoted to work in the shops, to farm and garden work, to helping in the bakery, the kitchen, and the laundry, to cleaning the cottages and to practice in the band. Ample time is allowed for recreation, military drill, and athletic sports. The boys rise at six o'clock in the morning and retire at 8 p. m. and sleep soundly after a day of study, work, and orderly routine. From all this entirely new habits are acquired. From six months to a year of this kind of life makes a remarkable change in the great majority of the boys. "All our staff who have had experience in other institutions for correcting the unfortunate juvenile delinquent quickly note," says Principal Todd, "the ease with which our boys respond to the discipline of the school, and the marked change in all the boys after they have been in the school a short time, also the great difference in the boy's view of his responsibility when he is eligible for parole or discharge." Only about 5½ per cent. of the paroled boys have been returned for violating parole.

In noting the effect of the discipline of the Parental School, it may be interesting to refer to one case in particular. A boy of twelve years of age from South Brooklyn was committed by the court, about two years ago, to a private institution on a charge of truancy and incorrigibility.

At the end of one month he escaped from the institution; was captured after several weeks, escaped from the institution a second time, was recaptured and transferred to the Parental School, from which he escaped within a month. After a period of a few days he was caught, returned, and disciplined. Finally he told the principal that he would submit to the regulations of the school. This boy was paroled in due time, and has been attending a school near his home regularly for many months past. The desire for right conduct is such among the boys that any attempt at disobedience, the use of profanity or vulgar language on the part of any one is immediately reprimanded and condemned.

The industrial work at the Parental School for the past year not only shows excellent results, but is a certain indication of the greater things that we can accomplish in this line when the facilities of the school are enlarged.

The tailor shop, which has been in operation only since January 1, 1910, shows good results in addition to the knowledge of the trade which the boys are learning. The following is a statement of the articles made, with their market value and the cost of production:

214 summer uniforms made, value \$4.00 each .....	\$856.00
Repairs to winter uniforms .....	100.00
	<hr/>
	\$956.00
COST OF PRODUCTION	
1,000 yards Khaki, at \$.143 per yard .....	\$143.00
Linings, threads, shears, buttons .....	206.81
Salary of instructor .....	300.00
	<hr/>
	\$649.81
Net profit .....	<hr/>
	\$306.19

In the laundry 26,702 articles have been washed during the year for the Parental School, the Brooklyn Truant School, the Manhattan Truant School and the Hall of the Board of Education.

The market value of this work is .....	\$5,760.05
The cost of operation was .....	1,379.16
	<hr/>
Total saving over amount of previous contract price for work.....	\$4,380.89

The following is a statement of the market value of the products of the bakery, the amount produced, and the cost of production:

Value of total product, bread, rolls, cakes, pies, etc. ....	\$4,885.31
Cost of production, wages, flour, miscellaneous .....	3,981.80
	<hr/>
Net profit .....	\$903.51

From May, 1909, to June 21, 1910, 55,967 loaves of bread and 13,183 rolls were baked and distributed among the truant schools.

Our Parental School farm has supplied the Manhattan Truant School

with vegetables, the Brooklyn Truant School with potatoes and green corn, and the School Ship with two loads of vegetables. The market value of all the products of the farm for the year ending May 31, 1910, was \$2,529.78.

The School band has been in existence about four months. No boy in this organization knew anything about any musical instrument when enrolled in the band. To-day the boys can play creditably about twenty selections. They appear twice a week at flag drill. Their playing in the village of Flushing at the celebration on July 4th was one of the enjoyable features of the day.

In the plumbing shop the boys are receiving much practical instruction. This instruction includes nearly all elementary work in the trade. They have learned to cut, thread, fit, and solder pipes, and have made many repairs to the plumbing in the building, besides laying a line of pipe from one of the cottages to the temporary stables.

I am pleased to report that we have secured the services of a practical printer, and now the printing shop is in operation.

The work in the carpenter shop is about all that is done in a regular elementary school under the course of study. The boys from the shop will soon be ready to build a fence along the rear of the farm.

The net weekly cost per capita for the instruction and maintenance of boys in the Parental School, based on an average attendance of 177, for the last year was \$3.85. In this the cost of coal, maintenance of plant, and operating the power house are not included, but the cost of provisions purchased in 1908 before the school was opened is included.

The following is a statement of changes in registration at the school during the year:

Admitted during the year .....	437
Returned on broken parole .....	25
	<hr/> 462
Paroled .....	233
Discharged .....	26
In hospital .....	7
Transferred to other institutions .....	2
Escaped, not returned .....	2
	<hr/> 270
Register, June 1, 1910 .....	192

Respectfully submitted,

EDWARD B. SHALLOW,

Associate City Superintendent, and Committee on Compulsory Education.

### Appendix III

#### Wisconsin's New Laws on Industrial Education

**H. E. Miles, Racine, Wisconsin**

**President, Wisconsin State Board of Industrial Education**

With much wisdom and foresight the Wisconsin Legislature of 1908 named a very able Commission to study the question of Industrial Education at home and abroad, and lay before the next Legislature, that of 1910, its findings and recommendations. The report of this Commission is regarded as the most intelligent expression upon the subject so far made in this country. Copies may be had upon request to The Legislative Reference Library, Madison, Wisconsin. The Wisconsin laws, then, were not hastily devised nor passed. They are based upon two years of exhaustive study by very able men, and upon the experience of all the countries of the world whose experience is of value.

#### Child Labor and Truancy Laws

"Wisconsin began at the beginning by rewriting her child labor and truancy laws. By those laws she has taken complete control educationally, so to speak, of the time of the child from its seventh to its sixteenth year. She has provided that no child under sixteen shall work at any occupation hazardous to body, health, or character."

The requirements are very exact with reference alike to parents, employers, and officers of the law. The employers of minors of any age should read carefully the Child Labor Law, Chapter 479, to be had upon application to the Industrial Commission at Madison. The very necessity now of the exercise of considerable care, and the observance of various regulations in the employment of a minor should be of mutual advantage to employee and employer in making the employment, once entered upon, more steady and continuous, more seriously regarded and appreciated. The laws are not paternalistic, and yet they do make it certain that the youth of Wisconsin shall, so far as the state can provide, be healthy, intelligent, of good morals, and shall grow up into efficient, capable men and women, worthy in all respects of their citizenship.

Every normal child is required to attend regularly the public school, or other equivalent school, from the seventh to the fourteenth year. Between fourteen and sixteen years of age there is an alternative; every child shall continue to attend the common school faithfully or, upon obtaining a definite permit from the Commissioner of Labor, a truancy officer, or the judge of a state, county, or municipal court, the child may enter upon a definitely specified useful occupation, working thereat not



more than 48 hours per week, including five hours per week to be spent in the Industrial School. If he discontinues the permitted occupation at any time he must return at once to the public school and the employer must return the permit for cancellation. There is some feeling that this maximum limit should be 48 hours per week exclusive of the 5 hours spent in school, or 53 hours in all. Very successful adjustments have, however, been worked out in some cases.

Every child in Wisconsin between fourteen and sixteen years of age who, under a special permit, enters upon some useful employment must go to an Industrial, Commercial, Continuation, or Evening School for five hours each week, the employer continuing the wages during those hours, the attendance upon school being for such hours, and at such places, as the local Board of Education prescribes. The character of the local board is an assurance to all that the hours will be made as convenient as circumstances permit. It is not, however, expected that these children will work hard all day, and then when fagged out be sent to school for further strain and wearisome effort. It is interesting to note in this connection the experience of the New York Central Railroad in its apprenticeship schools. The apprentices "ring in" at those schools at seven o'clock in the morning two mornings in the week, leaving for their shop work at nine o'clock. The school thus gets the boy when he is freshest and best able to receive instruction and profit by it. The company's superintendent declares that the best return for the wages paid these apprentices comes from the hours spent in these schools, so greatly are the efficiency and general usefulness of the apprentices increased by this instruction. He says that boys who have gotten well along in the school courses can take a new shop machine, and in a week's time produce three-quarters as much as the average skilled man, while boys who have not had this school instruction will often require a month's time on a new machine to produce one-half as much as the average mechanic, and the waste in material, etc., is, of course, correspondingly greater. Other employers make similar statements.

It may, therefore, be said that Wisconsin has compulsory education up to sixteen years of age, in the common school up to fourteen years, and from fourteen to sixteen either in the common school or the industrial school. There is no escape except for children engaged in agriculture, who are exempted from the provisions, presumably under the assumption that the farm is in a way a school.

### Truancy

The provisions against truancy are fairly complete, and a growing public sentiment may be expected to support their enforcement.

The new Truancy Law (Section 439a, etc., published by the Industrial Commission, Madison), by specific provisions, requires all truancy officers, and others in interest, to see to it that every child up to sixteen

years of age shall attend the common school, or an equivalent parochial or private school, until he has graduated from the elementary school and can furnish proper certificate to that effect, "or, if over fourteen and under sixteen years of age, to attend school, or become regularly employed at home or elsewhere," under permit as before mentioned, and with five hours per week in the industrial school.

The lax truancy laws of the various states result in great numbers of children absenting themselves from school without adequate cause. A great majority of those who so absent themselves might as well as not remain in school.

An investigation by a Massachusetts commission into the condition of 3,700 families whose children were absenting themselves from school disclosed the surprising fact that 76 per cent. of them might better than not continue in school. Their services were not needed by their families. They were out of school only because the parents were tired of insisting upon further attendance, and because the work of the school was distasteful.

It is not enough to compel children to attend school until sixteen years of age. Many children under such legal compulsion, and with the courses of study as heretofore, will hate school, will loiter and shirk in school, acquire an extreme distaste for work, and be more injured than helped. The new industrial education, by making work in the seventh and eighth grades more practical, will keep great numbers of these children in school of their own accord, and will make them like school sometimes as well as they like their games. Many a big rough boy despises the drawing lesson that requires him to picture a rose. He will be absorbed with interest when the drawing lesson enables him to make a working draft of a house or an automobile.

### Illiteracy

Wisconsin is apparently determined to do away with illiteracy. Section 1728a-11 requiring that no person shall employ a minor over fourteen years of age in a community where there is an Industrial School for the industry in which the minor works without first securing a written permit from "the commissioner of labor, state factory inspector, or any assistant factory inspector, or from the judge of a juvenile court where such child resides, authorizing the employment of the minor as provided in Section 1728b of the statutes, and certifying either to his ability to read at sight and write legibly simple sentences in the English language, or that he is a regular attendant at the public evening school or continuation school." This provision operates only against illiteracy, as attendance upon industrial schools in other cases is not compulsory after the age of sixteen.

Taking the country as a whole, it is humiliating to note that its percentage of illiteracy is fifty times greater than that of Germany, Norway,

Sweden, or Denmark, there being 107 illiterates per 1,000 persons in the United States and only 2 per 1,000 in the latter countries. In New York state one voter in eighteen is illiterate. In the German army only one volunteer in 2,500 is illiterate, and in the German navy only one in 10,000. Nor is this condition chargeable to immigration, for among the children of immigrants there are only 9 illiterates per 1,000, while there are 44 per 1,000 among the native white children of native parents. It is found, too, that in opening classes in shop mechanics, with apparently skilled and educated mechanics, the teacher must often begin with lessons in addition and subtraction.

### The State Board

"With her child labor and truancy laws thus rewritten, Wisconsin proceeded to pass her laws on industrial education. First, she established a State Board of Industrial Education, consisting of three employers, three employees, and three practical and eminent educators—being the State Superintendent of Public Instruction, the Dean of the University Extension Division, and the Dean of the College of Engineering. The whole law, as before stated, is based upon the findings of a commission of especially capable men, and puts Wisconsin abreast of the foremost industrial nations of the world, not borrowing their systems, but adapting and Americanizing them."

As two-thirds of the State Board of Industrial Education and two-thirds of the local boards of industrial education consist of employers and employees, a great demand is thereby made upon the intelligence and patriotism of employers and employees throughout the state. Never before, possibly, have such demands been made upon these classes for the betterment of their own interests, nor such opportunities given them. In every community it is now necessary that employers and employees give diligent and especial consideration to the development of the local school that it may particularly and exactly meet the requirements of the community, and shall differ from schools in other communities in so far as the communities' industries and needs differ from those of other communities. There is not an industry in the state but its people are called upon to see to it that the local school adapt itself, so far as it reasonably may, to the interests of those engaged in that industry to the end that the industry and the community may be made more and more efficient and serviceable.

It is well here to quote from the law words which nobly set forth its purpose, equally with reference to Stout Institute, where teachers will be instructed, and to the schools in general throughout the state, "to instruct young persons in industrial arts and occupations . . . and to give such instruction as will lead to a *fair knowledge of the liberal arts, a just and seemly appreciation of the nobility and dignity of labor*, and in

general to promote diligence, economy, efficiency, honor, and good citizenship."

It is recognized that the teachers must be very differently trained from those in the present schools and that the making of teachers is of immediate and prime importance.

Next, the state appropriates toward the maintenance of industrial schools throughout the state now being established a sum in each case equal to one-half of the amount expended in any school up to 3,000, and not exceeding 10,000 for any one community, providing it is shown to the State Superintendent of Public Instruction that a school seeking state aid has been maintained in a satisfactory manner for not less than eight months during the year ending the 30th of the preceding June.

### Local Boards and Schools

The law requires that there be established in every community of five thousand inhabitants or more (and there may be established in smaller communities) a local board of industrial education, consisting of two employers, two employees, and the city superintendent. It is mandatory upon the local board to establish, foster, and maintain industrial, commercial, continuation, and evening schools. The existing school buildings and equipment shall be used as far as practicable.

The local board is required to report before the first day of September each year to the local taxing power the amount of money needed to support these schools and this sum "*shall be levied* as other taxes are levied," and "shall be equal to the amount of money so required by said local board," not exceeding one-half mill, and these moneys shall be set aside for and expended by the local board.

### Courses of Study

The courses of study shall be approved by the state superintendent and the state board and, in addition to the industrial courses, "shall include English, citizenship, sanitation," etc., to the end that the industrial workers shall be not only skilled mechanics but good citizens, and shall know what are their rights and obligations with respect to themselves and their fellows, and how best to secure and observe those rights and obligations.

### Cost of Materials

Students "may be required to pay for materials consumed by them in their work," or the school board may establish "a fixed sum to be paid by each student in each course" to cover the cost of material; and articles manufactured "shall be disposed of at their market value at the discretion of the school board, and the proceeds shall be paid to the local treasurer for the fund of the local board of industrial education."

### Apprenticeship

Wisconsin has likewise rewritten her apprenticeship laws. The former law was written in 1849 and under present industrial conditions was obsolete. It becomes a punishable offense to form "any contractual relation in the nature of an apprenticeship" without complying with this new law. The law requires that all apprenticeship agreements shall be signed by the legal representative of the minor and by the employer. The agreement shall state the number of hours to be spent in work and the number of hours to be spent in instruction; the total of such hours shall not exceed fifty-five in any one week.

The agreement must provide that *the whole trade*, as carried on by the employer, *shall be taught*, and shall state the amount of time to be spent at each process machine; also that not less than five hours per week of the before-mentioned fifty-five hours per week shall be devoted to instruction in English, in citizenship, business practice, physiology, and such other branches as may be approved by the State Board of Industrial Education. It shall name the amount of compensation to be paid the apprentice.

The instruction may be given in a public school, or in such other manner as may be approved by the State Board of Industrial Education. Failure to attend school subjects the apprentice to a loss of compensation "for three hours for every hour such apprentice shall be absent without good cause." It is not required that the apprentice attend school during such parts of the year as the public school is not in session.

While the requirements of the law are specific, they meet the favor of many of the largest employers in Wisconsin, and there is reason to believe that the apprenticeship system, as now provided, will develop very materially in ways advantageous to employer and employee. The apprentice is assured of steady employment, and of such instruction as will make him a thoroughly capable man and wage earner up to the limit of his abilities, while the employer will be assured of the continued service of this sort of employee. Some of the large manufacturers have very cordially brought their apprenticeship system under the new law, and will either have apprenticeship schools in their own shops, as is done in many places successfully, or will give their apprentices the use of the public Industrial Schools in their communities. As elsewhere stated, experience shows that the wages paid for the hours in school bring the best money returns of any.

In thus providing for the education in the vocations, and in citizenship of that half of our population that lives by manufacturing and commerce, Wisconsin is doing, and the other states will do, only what for years they have been doing for the other half that lives by agriculture.

### Agricultural Education

Great expenditures for many years and wise direction of agricultural education have marvelously improved and made more scientific our industrial army of agricultural workers, and have made our farmers the happiest, and, in many respects, the best informed, and most reliable of American workers. Not only are many millions spent for the instruction of old and young in that industry, but other millions (\$4,000,000 by the Federal Department of Agriculture alone) are annually expended in direct promotion work, in the study of soils, pests, new crops, etc., to the infinite betterment of agriculture. It is not long ago that the annual product of the soil, valued at three billions of dollars, was looked upon with amazement. That product now equals nine billions of dollars, the increase largely due to agricultural investigation and training. The more spent, the greater has been the percentage of return. Indeed this outlay is not an expenditure; it is an investment.

And now the state is to render similar service to its neglected commercial and manufacturing population, assistance that is given in European countries as readily and as effectively as it is here given to the farmers.

Wisconsin has laid her foundations broad and deep. In criticism it may be said that these laws, however splendid, do not constitute an educational system. They offer only the opportunity and the requirements; the great, living, pulsating, efficient school is yet to be created; that will require infinite judgment, painstaking application and adjustment. Earnest men, not unmindful of their shortcomings, are applying themselves to the task. They will need and require the assistance and support of all good people, and are relying upon it.

The first school under the Wisconsin plan was opened in Racine. At the end of the first week, with only a general notice as an invitation, three hundred eager students were at work in the evening school, the building was crowded and two to four hundred students were yet to be provided for. A canvass of Appleton shows five hundred students ready for work. The prospect in Oshkosh is particularly attractive. Its splendid new industrial school building will be equipped and in operation within a few weeks. Manitowoc has 200 students in her new industrial classes. Other cities are responding similarly, and it may confidently be anticipated that Wisconsin soon will feel the influence of her industrial schools in a remarkable degree. Those who are most interested and informed throughout the United States express the highest approval of the Wisconsin system, and are watching it with interest.

## Appendix IV

### Concerning the Child Labor and Compulsory Education Laws—State of Ohio

#### For the Information of Parents, Teachers, Pupils and Employers

The Compulsory Education Law, going into effect in May, 1910, provides that all children not regularly employed must remain in school until they are sixteen years of age. In order to be employed it is necessary for them to get "Certificates to Work" from the Superintendent of Schools in the school district in which they are employed. Certificates to work in Cincinnati are given only at the office of the Superintendent of Schools, City Hall, between the hours of 8.30 and 12 and 1 and 3, on school days, and between the hours of 9 and 12 on Saturdays.

#### Conditions on Which Certificates to Work are Granted

The law expressly provides that certificates are to be given only to youths between 14 and 16 years of age who have completed the fifth grade. None who do not satisfy both these requirements can be granted certificates. It will be useless to send such to the Superintendent's office.

*In order to get a certificate, pupils must bring with them to the Superintendent of Schools' office:*

1st. *A school record* properly filled out and signed by their teacher or principal giving their (1) name, (2) date of birth, (3) residence, (4) grade, (year in the course), (5) standing in their studies and general conduct, (6) number of weeks in attendance in the year previous to the date of applying for the school record.

2nd. *A birth record duly attested:* Either a copy of the baptismal or birth certificate from a church, or the birth record from the City Health Department, or the affidavit of the parent or guardian made in person at the office issuing the certificate.

3rd. *A written statement from an employer agreeing to give the child legal employment, and to return to the Superintendent of Schools the "certificate" within two days after the child's employment shall cease, with the reason for the withdrawal or dismissal.*

These three provisions must be met and the evidence kept on file in the Superintendent of Schools' office for the inspection of the State Inspector of Shops.

Children over 16 years of age need no certificate from the Superintendent of Schools, but should file with their employer documentary evidence of their age such as is indicated in 2 above, for the inspection of the truant officer and the State Inspector.

### Other Provisions of the New Law

1. Any child between 14 and 16 years of age who ceases to work must report at once to the Superintendent of Schools; and said child must be returned to school if employment be not found in two weeks. If, however, the position be lost through misconduct or irregularity, the child is to be returned to school at once by the Superintendent of Schools and held until the end of that school year.

2. If the Superintendent of Schools doubts that a child has sufficient strength to perform the work which is to be undertaken the parent must get a certificate from the Board of Health showing that the child is physically able to perform said work.

3. The truant officer must keep on file the name, address, and record of all children who have certificates to work and employers will have access to those files.

4. Any child, 12 years of age or more, who has not reached the fourth grade, may be required by the Principal to give his entire time to reading, writing, spelling, geography, arithmetic, and the use of the English language with as much manual training as the circumstances permit, and be relieved from other work. This may be done either in a special class or a special school.

5. Boards of Education are authorized to establish part-time day schools for those who are at work, and then may require all who have not completed the eighth grade to continue their schooling until they are 16 years of age. Those who are at work may be required to attend eight hours a week between the hours of 8 a. m. and 5 p. m. Those who are not employed are required to attend school full time until they are sixteen, no matter what grade they have reached.

The Board of Education has adopted a resolution to provide "Continuation Schools" to meet the provisions of the law, and therefore all certificates to work hereafter granted will be with the condition that the Board may require attendance at school eight hours a week.

### Hours of Work of Those Employed

Boys under 16 and girls under 18 are not permitted to work in any establishment more than 48 hours a week, nor more than 8 hours in any one day, nor before 7 o'clock in the morning nor after 6 o'clock in the evening.

### Kinds of Work Forbidden to Those Under Sixteen

Children under 16 are not permitted to work at the following occupations:

1. Machinery; sewing machine belts in any workshop or factory in any capacity whatever; adjusting any belt to any machinery; oiling or



assisting in oiling, wiping, or cleaning machinery; operating or assisting in operating circular or band saws, wood shapers, wood joiners, planers, sand-paper, or wood-polishing machinery; job or cylinder printing presses operated by power other than foot; emery or polishing wheels used for polishing metal; wood-turning or boring machinery; stamping machines used in sheet metal and tinware manufacturing; stamping machines in washer and nut factories; corrugating rolls, such as are used in roofing and washboard factories; steam boilers, steam machinery, or other steam-generating apparatus; dough brakes or cracker machinery or any machinery of any description; wire or iron-straightening machinery; rolling mill machinery; punches or shears; washing, grinding, or mixing mills; calender rolls in rubber manufacturing; laundering machinery; passenger or freight elevators.

2. Chemicals, etc.; nor in any capacity in preparing any composition in which dangerous or poisonous acids are used; manufacture of paints, colors, or white lead; dipping, dyeing, or packing matches; manufacturing, packing, or storing powder, dynamite, nitroglycerin, compounds, fuses, or other explosives.

3. Other occupations forbidden: Manufacture of goods for immoral purposes; nor as pin boys in bowling alleys; nor in or about any distillery, brewery, or any other establishment where malt or alcoholic liquors are manufactured, packed, wrapped, or bottled; nor in any hotel, theater, concert hall, drug store, saloon, or place of amusement wherein intoxicating liquors are sold; nor in any employment that may be considered dangerous to their lives or limbs, or where their health may be injured or morals depraved; nor shall females under the age of 16 be employed in any capacity where such employment compels them to remain standing constantly; nor in assorting, manufacturing, or packing tobacco.

### Penalties for Violation of These Laws

1. Employers: Any one who employs a child under 16 years of age without a certificate to work, or who fails to keep a certificate on file, or who fails to return it to the Superintendent of Schools within two days after the child's withdrawal or dismissal from work, or refuses to permit a truant officer to examine such certificate, or who shall permit a child to do work that is forbidden to children under 16, or during hours that are forbidden, or who in any way employs minors contrary to the Compulsory Education or Child Labor Law, shall be subject to a fine of not less than \$25, nor more than \$50 for each offense.

2. Parents: When a child is absent from school in violation of the provisions of this law, the truant officer shall notify the parent, and if the latter fails to cause such child to attend school, he shall be summoned before a court, and unless he proves his inability to compel his child to attend, he shall be fined not less than \$5, nor more than \$20, or he may be required to give bond in the sum of \$100, that he will cause his child

to remain in school during the term prescribed by law. If the parent fails to pay the fine or furnish the bond, "then said parent, guardian, or other person shall be imprisoned in the county jail not less than ten days nor more than thirty days."

3. Children: Any child within the provisions of this act not engaged in some regular employment who willfully absents itself habitually from school, or who while in attendance at school is incorrigible, vicious, or immoral in conduct; or who wanders about the streets or public places during school hours; or who violates any of the provisions of this act, shall be deemed a *delinquent child* and shall be subject to the provisions of law relating to delinquent children.

After the ordinary means of discipline have been tried and the parents have been consulted, such children, if in the public schools of Cincinnati, shall be reported to the Superintendent of Schools, who may assign them to the Special School for Boys, or other public school, or refer them to the Juvenile Court, which has final jurisdiction.

#### Truant Officer Has Police Powers

The truant officer is vested with police powers, the authority to serve warrants, to enter places where children are employed, and to do whatever is necessary to enforce this act. He may take into custody any youth within the provisions of this act not regularly employed, who is not attending school, and shall conduct such youth to school. He shall institute proceedings against any one who is violating any of the provisions of this act and shall perform such other service as may be deemed necessary to preserve the morals or secure the good conduct of school children.

#### Principals or Teachers

The Principals of schools are especially requested to see that children do not come for certificates to work until they have the three requisite papers and not at all until they are fourteen years of age and have completed the fifth grade. The school report to parents, accompanied by a note showing the grade in school, date of birth, and number of weeks the child attended school in the past year, will satisfy the requirements of the law, so far as the school is concerned. School authorities are subject to penalty if they fail to comply with the law.

















